PUBLIC NOTICE

Alcoa Inc. has applied to the Tennessee Air Pollution Control Division (TAPCD) for renewal of a major source operating permit subject to the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations (also frequently referred to as Title V regulations). A major source (Title V) operating permit is required by both the Federal Clean Air Act and the Tennessee Air Pollution Control Regulations.

The applicant is Alcoa Inc. with a site address of 2300 North Wright Road in Alcoa, Tennessee. They seek to obtain renewal of a major source operating permit for their south ingot and south remediation area, which includes south ingot casting pit #1 and pit #3, and skim cooling and storage. The renewal will also include south plant remediation. However, it should be noted that this facility has a current major source operating permit for south ingot and south remediation.

EPA has agreed to treat this draft Part 70 permit modification as a proposed Part 70 permit modification and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division the comments have been received and resolved. Whether EPA's 45-day review period is performed concurrently with the public notice comment period or after the public comment period has ended, the deadline for citizen's petition to object to the EPA Administrator will be determined as if EPA's 45-day review is performed after the public comment period has ended (i.e., sequentially).

The status regarding EPA's 45-day review of this project and the deadline for submitting a citizen's petition can be found at the following website address:

https://www.epa.gov/caa-permitting/tennessee-proposed-title-v-permits

A copy of the application materials used by the TAPCD and a copy of the draft permit are available for public inspection during normal business hours at the following locations:

Blount County Public Library
508 N. Cusick Street
Maryville, TN 37804

and

Division of Air Pollution Control
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243

Also, if you require a copy of the draft permit it is available electronically by accessing the TDEC internet site located at:
http://www.tn.gov/environment/topic/ppo-air

Continued on the next page

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be made within thirty (30) days of the date of this notice and should be addressed to **Ms. Michelle Walker Owenby, Director, TN Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Ave., 15th Floor, Nashville, TN 37243.** Comments will be accepted until the end of the 30-day comment period. A final determination will be made after consideration of all relevant comments and other available information. Questions concerning this source may be addressed to Mr. Steven Simpson at the same address, or by calling (615) 532-0554.

Individuals with disabilities who wish to participate in these proceedings (or to review these filings) should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such participation. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Ave., 2nd Floor, Nashville, TN 37243, 1-866-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

For *Maryville Daily Times*-- publish once during the period of April 4, 2016, through April 15, 2016.

Air Pollution Control DATE: March 29, 2016
Assigned to –Steven Simpson

No alterations to the above are allowed:
Alcoa Inc. must pay for publication of this notice in the newspaper shown.
The TN Division of Air Pollution Control must be furnished with an affidavit from the newspaper stating that the notice was published and the date of publication, or one complete sheet from the newspaper showing this notice, the name of the newspaper and the date of publication. Mail to: Steven Simpson, TN Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Ave., 15th Floor, Nashville, TN 37243.

TITLE V PERMIT STATEMENT

Renewal 2

Facility Name: Alcoa Inc. – Tennessee Operations South Ingot and Remediation
City: Alcoa
County: Blount

Date South Ingot Renewal Application Received:	**June 30, 2015**
Date South Ingot Application Deemed Complete:	**June 30, 2015**
Date South Remediation Renewal Application Received:	**April 30, 2013**
Date South Remediation Application Deemded Complete:	**April 30, 2013**

Emission Source Reference Number:	**05-0008 South Ingot South Remediation**
Permit Number:	**570521**

INTRODUCTION

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit. This Title V Permit Statement is written pursuant to Tennessee Air Pollution Control Rule 1200-03-09-.02(11)(f)1.(v). The primary purpose of the Title V operating permit is to consolidate and identify existing state and federal air requirements applicable to Alcoa Inc. – Tennessee Operations and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the Title V Operating Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the compliance status with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Acronyms

PSD - Prevention of Significant Deterioration
NESHAP - National Emission Standards for Hazardous Air Pollutants
NSPS - New Source Performance Standards
MACT - Maximum Achievable Control Technology
NSR - New Source Review

I. Identification Information

A. Source Description: Alcoa Inc. – Tennessee Operations is located in Alcoa, Tennessee. The facility is a primary and secondary aluminum manufacturer. South Ingot and Remediation includes the following emission units or activities.

List and describe emission source(s):

05-0008-21, South Ingot Casting Pit No. 1
05-0008-57, South Ingot Casting Pit No. 3
05-0008-72, Skin Cooling and Storage

Insignificant Activities

Various insignificant activities are listed in the permit applications.

South Remediation only has insignificant activities.

A.2 Changes Made:

Permitting Activities Since Original Permit Issuance (Previous Permit 548327)

Administrative Amendment #1: Alcoa submitted a notification of change in responsible official dated July 11, 2005.
Minor Modification #1: Alcoa changed the emission factors for particulate matter (PM), hydrogen chloride (HCl), and dioxins/furans (D/F) for melting furnace #9 and #11 in casting pit #3 based on a MACT compliance test conducted in May 2006. The emission factors changed from 0.05 lbs of PM emitted per ton of aluminum processed to 0.108 lbs of PM emitted per ton of aluminum processed, 0.04 lbs of HCl emitted per ton of aluminum processed to 0.018 lbs of HCL emitted per ton of aluminum processed, and 0.15 micrograms (µg) TEQ (toxicity equivalent) per megagram (Mg) of aluminum processed to 0.445 µg TEQ per Mg of aluminum processed. The changes are in the fee table of condition E1-1, and the compliance method of condition E6-1.
The facility changed the opacity requirement for conditions E5-6 and E6-2. The change to the opacity requirement would allow one (1) six-minute period in any one (1) hour period were the opacity exceeded 20%, and four (4) six-minute periods in any 24-hour period were the opacity exceeded 20%.

Permit Renewal Changes
Change in Responsible Official

Changes Made Due to Comments During Public Notice Period
Company comments:

Page 19 - Condition E2
The annual compliance certification should be for the period of July 1 through June 30 rather than January 1 to December 31 as we discussed.

Page 27 - Condition E5-1
The hydrogen chloride emission factors for North and South Inline degassers should be 0.00005 lb/ton rather than 0.0005 lb/ton.

Permit Changes Since Issuance of permit 562362

Minor Modification #1:
Alcoa changed the emission factors for particulate matter (PM), hydrogen chloride (HCl), and dioxins/furans (D/F) for melting furnaces #9 and #11 in casting pit #3 based on a MACT compliance test conducted in 2011. The changes were made in conditions MM1E4-1, MM1E4-2, MM1E4-3, MM1E4-4, and MM1E6-1. The particulate matter (PM) and hydrogen chloride (HCl) emissions for casting pit #3 degassers were also changed.
Alcoa changed the emission factors for particulate matter (PM) and hydrogen chloride (HCl) for holding furnaces #5, #6, #7, #10 and #12 in casting pit #3 based on a MACT compliance test conducted in 2011. The changes were made in conditions MM1E4-1, MM1E4-3, and MM1E5-1.
A new responsible official was identified.
Administrative Amendment Request:
Language was removed from condition E4-10 that was not required by 40 CFR §63.1510.
Minor Modification #2:
Alcoa modified their OM&M plan.
Significant Modification #1
The entire permit is included with this significant modification.
The new reporting addresses were included along with the address to report electronically.
The volatile organic compound emission limitations in conditions E5-1(SM1) and E6-2(SM1) were removed due to the issuance of PAL (plant wide applicability limitation) permit for VOCs, permit 967460, which was effective December 1, 2013.

Public Notice Date: August 12, 2014
No comments
Public Hearing Date: NA

Minor Modification #3:

The facility is updating emission factors based on the performance tests conducted in October 2015. This minor modification updates the emission factors in conditions E4-1, E4-2, E4-3, E4-4, E4-5, E5-1, and E6-1. The OM&M plan was also updated.

Conditions A12, B5, E2(b), and E3-8 were amended.

B. Facility Classification

1. Attainment or Non-Attainment Area Location

Area *is* designated as an attainment area for all pollutants.

2. Company *is* located in a *Class II area*.

C. Regulatory Status

1. PSD/NSR

This facility is a major source under PSD.

2. Title V Major Source Status by Pollutant

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's status? Major or Non-Major Source Status
PM	Yes	Major
PM_{10}	Yes	Major
SO_2	Yes	Major
VOC	Yes	Major
NO_X	Yes	Major
CO	Yes	Major
GHG (CO2e)	Yes	Major
Individual HAP	yes	Major
Total HAPs	yes	Major

3. MACT Standards

This facility is a major source for HAPs.

This facility is subject to:

40 CFR part 63 subpart LL, National Emission Standards for Hazardous Air Pollutants for Primary Aluminum Reduction Plants

40 CFR part 63 subpart RRR, National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

This portion of the facility may be subject to 40 CFR part 63 subpart GGGGG, National Emission Standards for Hazardous Air Pollutants: Site Remediation, if an action project triggers applicability.

4. Program Applicability

Are the following programs applicable to the facility?

PSD yes

NESHAP *yes*

NSPS *yes*

II. Compliance Information

A. Compliance Status

Is the facility currently in compliance with all applicable requirements?

Yes

Are there any applicable requirements that will become effective during the permit term?

No

III. Other Requirements

A. Emissions Trading

The facility *is not* involved in an emission trading program.

B. Acid Rain Requirements

This facility *is not* subject to any requirements in Title IV of the Clean Air Act.

C. Prevention of Accidental Releases

Not Applicable

IV. <u>Public Participation Procedures</u>

Notification of this draft permit was mailed to the following environmental agencies:

1. EPA Region 4 Air Planning Branch
2. North Carolina
3. Cherokee Nation
4. Knox County

Public Notice Date:

Public Comments Received:

Public Hearing Date:

STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243

OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued: draft **Permit Number:** 570521

Date Expires: draft

Issued To:
Alcoa Inc. – Tennessee Operations

Installation Address:
300 North Hall Road
Alcoa, Tennessee

Installation Description: **South Ingot South Remediation**

21: South Ingot Casting No. 1
57: South Ingot Casting No. 3
72: Skim Cooling and Storage

Emission Source Reference No.:
05-0008

Renewal Application Due Date:
Between draft, and draft

Primary SIC: 33

Information Relied Upon:
Remediation Renewal Application dated April 30, 2013
South Ingot Renewal Application dated June 26, 2015
Includes Minor Modification request dated November 24, 2015
Operation, Maintenance, and Monitoring Plan dated November 24, 2015

(continued on the next page)

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

CN-0827 (Rev.2-13) RDA-1298

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SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

A1. **Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulation.

TAPCR 1200-03

A2. **Compliance requirement.** All terms and conditions in a permit issued pursuant to paragraph 1200-3-9-.02(11) including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act.

The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11)(e)2(i) and 1200-03-09-.02(11)(e)1(vi)(I)

A3. **Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11)(e)1(vi)(II)

A4. **The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

TAPCR 1200-03-09-.02(11)(e)1(vi)(III)

A5. **Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11)(e)1(vi)(IV)

A6. **Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee

may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11)(e)1(vi)(V)

A7. Severability clause. The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09-.02(11)(e)1(v)

A8. Fee payment.

(a) The permittee shall pay an annual major source emission fee based upon the responsible official's choice of actual emissions or allowable emissions. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A major source annual emission fee will not be charged for emissions in excess of the cap (s) or for carbon monoxide.

(b) Major sources who have filed a timely, complete operating permit application in accordance with 1200-03-09-.02(11), shall pay allowable emission based fees until the beginning of the next annual accounting period following receipt of their major source operating permit. At that time, the permittee shall begin paying their annual emission fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees as stated under SECTION E of this permit. Once permitted, altering the existing choice shall be accomplished by a written request of the major source, filed in the office of the Technical Secretary at least one hundred eighty days prior to the expiration or reissuance of the major source operating permit.

(c) Major sources must conform to the following requirements with respect to fee payments:

1. If a major source choosing an allowable based annual emission fee wishes to restructure its allowable emissions for the purposes of lowering its annual emission fees, a mutually agreed upon, more restrictive regulatory requirement may be established to minimize the allowable emissions and thus the annual emission fee. The more restrictive requirement must be specified on the permit, and must include the method used to determine compliance with the limitation. The documentation procedure to be followed by the major source must also be included to insure that the limit is not exceeded. Restructuring the allowable emissions is permissible only in the annual accounting periods of eligibility and only, if the written request for restructuring is filed with the Technical Secretary at least 120 days prior to the beginning of the annual accounting period of eligibility. These periods of eligibility occur upon expiration of the initial major source operating permit, renewal of an expired major source operating permit or reissuance of a major source operating permit.

2. Beginning with the annual accounting period beginning July 1, 2004 to June 30, 2005, major sources paying on allowable based emission fees will be billed by the Division no later than April 1 prior to the end of the accounting period. The major source annual emission fee is due July 1 following the end of the accounting period.

3. Beginning with the annual accounting period beginning July 1, 2004 to June 30, 2005, major sources choosing an actual based annual emission fee shall file an actual emissions analysis with the Technical Secretary which summarizes the actual emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the actual emissions analysis, the source shall calculate the fee due and submit the

payment and the analysis each July 1st following the end of the annual accounting period.

4. Beginning with the annual accounting period beginning July 1,2004 to June 30, 2005, major sources choosing a mixture of allowable and actual based emission fees shall file an actual emissions and allowable emissions analysis with the Technical Secretary which summarizes the actual and allowable emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

The mixed based fee shall be calculated utilizing the 4,000 ton cap specified in subparagraph 1200-03-26-.02(2)(i). In determining the tonnages to be applied toward the regulated pollutant 4,000 ton cap in a mixed based fee, the source shall first calculate the actual emission based fees for a regulated pollutant and apply that tonnage toward the regulated pollutant's cap. The remaining tonnage available in the 4,000 ton category of a regulated pollutant shall be subject to allowable emission based fee calculations for the sources that were not included in the actual emission based fee calculations. Once the 4,000 ton cap has been reached for a regulated pollutant, no additional fee shall be required.

5. Major sources choosing to pay their major source annual emission fee based on actual based emissions or a mixture of allowable and actual based emissions may request an extension of time to file their emissions analysis with the Technical Secretary. The extension may be granted by the Technical Secretary up to ninety (90) days. The request for extension must be postmarked no later than July 1 or the request for extension shall be denied. The request for extension to file must state the reason and give an adequate explanation.

An estimated annual emission fee payment of no less than eighty percent (80%) of the fee due July 1 must accompany the request for extension to avoid penalties and interest on the underpayment of the annual emission fee. A remaining balance due must accompany the emission analysis. If there has been an overpayment, a refund may be requested in writing to the Division or be applied as a credit toward next year's major source annual emission fee. The request for extension of time is not available to major sources choosing to pay their major source annual emission fee based on allowable emissions.

6. Newly constructed major sources or minor existing sources modifying their operations such that they become a major source in the midst of the standard July 1st to June 30th annual accounting period, shall pay allowable based annual emission fees for the fractional remainder of the annual accounting period commencing upon their start-up. At the beginning of the next annual accounting period, the "responsible official" of the source may choose to pay annual emission fees based on actual or allowable emissions or a mixture of the two as provided for in this rule 1200-03-26-.02.

(d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Sources that are subject to federally promulgated hazardous air pollutant standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31 will place such regulated emissions in the specific hazardous air pollutant under regulation. If the pollutant is also in the

family of volatile organic compounds or the family of particulates, the pollutant shall not be placed in that respective family category.

2. A miscellaneous category of hazardous air pollutants shall be used for hazardous air pollutants listed at part 1200-03-26-.02(2)(i)12 that do not have an allowable emission standard. A pollutant placed in this category shall not be subject to being placed in any other category such as volatile organic compounds or particulates.

3. Each individual hazardous air pollutant and the miscellaneous category of hazardous air pollutants is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM_{10} on an allowable emission basis may do so if they have a specific PM_{10} allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM_{10} emission basis, it may do so if the PM_{10} actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM_{10} emission levels must be made as part of the source's major source operating permit in advance in order to exercise this option. The PM_{10} emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i) shall also apply to PM_{10} emissions.

TAPCR 1200-03-26-.02 (3) and (9) and 1200-03-9-.02(11)(e)1(vii)

A9. **Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

A10. **Inspection and entry.** Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or his authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

(a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Clean Air Act and Chapter 1200-03-10 of TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3.(ii)

A11. **Permit shield.**

(a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:

1. Such applicable requirements are included and are specifically identified in the permit; or

2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.

(b) Nothing in this permit shall alter or affect the following:

1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;

2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or

4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.

(c) Permit shield is granted to the permittee.

A12. Permit renewal and expiration.

(a) An application for permit renewal must be submitted at least 180 days, but no more than 270 days prior to the expiration of this permit. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted.

(b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered in violation of paragraph 1200-03-09-.02(11) until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-03-9-.02(11).

(c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)3 and 2, 1200-03-09-.02(11)(d)1(i)(III), and 1200-03-09-.02(11)(a)2

A13. Reopening for cause.

(a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:

1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed not later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to 1200-03-09-.02(11)(a)2.

2. Additional requirements become applicable to an affected source under the acid rain program.

3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.

(c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.

(d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:

1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90 day time period.

2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.

3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13 (b) and Condition A13 (c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7.

A14. **Permit transference.** An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

(a) Transfer of ownership permit application is filed consistent with the provisions of 1200-03-09-.03(6), and

(b) Written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

A15. **Air pollution alert.** When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR 1200-03-09-.03(1) and TAPCR 1200-03-15-.03.

A16. **Construction permit required.** Except as exempted in TAPCR 1200-03-09-.04, or excluded in subparagraph TAPCR 1200-03-02-.01(1)(aa) or subparagraph TAPCR 1200-

03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

A17. **Notification of changes.** The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

(a) change in air pollution control equipment

(b) change in stack height or diameter

(c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

A18. **Schedule of compliance.** The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance, the permittee must submit a schedule for coming into compliance, which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3 and 40 CFR Part 70.5(c)

A19. Title VI.

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.

2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.

3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

A20. 112 (r). The permittee shall comply with the requirement to submit to the Administrator or designated State Agency a risk management plan, including a registration that reflects all covered processes, by June 21, 1999, if the permittee's facility is required pursuant to 40 CFR 68 to submit such a plan.

TAPCR 1200-03-32-.03(3)

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. **Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.

(a) Where applicable, records of required monitoring information include the following:

1. The date, place as defined in the permit, and time of sampling or measurements;

2. The date(s) analyses were performed;

3. The company or entity that performed the analysis;

4. The analytical techniques or methods used;

5. The results of such analyses; and

6. The operating conditions as existing at the time of sampling or measurement.

(b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B2. **Retention of monitoring data.** The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

B3. **Reporting.** Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reporting periods will be dated from the end of the first complete calendar quarter following issuance of this permit unless otherwise noted. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B4. **Certification.** Except for reports required under "State Only" requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11)(d)4

B5. **Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B,

D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(c) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in B5(MM6)(b) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and

(d) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 68, No.124, June 27, 2003, pages 38518 through 38523

B6. Submission of compliance certification. The compliance certification shall be submitted to:

The Tennessee Department of Environment and Conservation Environmental Field Office specified in Section E of this permit	and	Air and EPCRA Enforcement Branch US EPA Region IV 61 Forsyth Street, SW Atlanta, Georgia 30303

TAPCR 1200-03-09-.02(11)(e)3(v)(IV)

B7. Emergency provisions. An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance. The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-03-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-03-20-.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-3 or other applicable requirement.

TAPCR 1200-03-09-.02(11)(e)7

B8. Excess emissions reporting.

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office. The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved

2. Time malfunction, startup, or shutdown began and/or when first noticed

3. Type of malfunction and/or reason for shutdown

4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation

5. The company employee making entry on the log must sign, date, and indicate the time of each log entry. The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

B9. Malfunctions, startups and shutdowns - reasonable measures required. The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment

breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60 (Standards of performance for new stationary sources), 61 (National emission standards for hazardous air pollutants) and 63 (National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10. Reserved

TAPCR 1200-03-20-.04(2) (no longer exists)

B11. **Report required upon the issuance of a notice of violation for excess emissions.**

The permittee must submit within twenty (20) days after receipt of the notice of violation, the data shown below to assist the Technical Secretary in deciding whether to excuse or validate the violation. If this data has previously been available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same twenty (20) day time period. The minimum data requirements are:

(a) The identity of the stack and/or other emission point where the excess emission(s) occurred;

(b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;

(c) The time and duration of the emissions;

(d) The nature and cause of such emissions;

(e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;

(f) The steps taken to limit the excess emissions during the occurrence reported, and

(g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the twenty (20) day period specified shall preclude the admissibility of the data for consideration of excusal for malfunctions.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C

PERMIT CHANGES

C1. **Operational flexibility changes.** The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:

(a) The change cannot be subject to a requirement of Title IV of the Federal Act or Chapter 1200-03-30.

(b) The change cannot be a modification under any provision of Title I of the federal Act or Division 1200-03.

(c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.

(d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in Rule 1200-03-09-.04.

(e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.

(f) The change shall not qualify for a permit shield under the provisions of part 1200-03-09-.02(11)(e)6.

(g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a)4 (ii)

C2. **Section 502(b)(10) changes.**

(a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-03-09-.02(11)(e)7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.

(b) The written notification must be signed by the facility Title V Responsible Official and include the following:

1. a brief description of the change within the permitted facility;

2. specifies the date on which the change will occur;

3. declares and quantifies where possible any change in emissions;

4. declares any permit term or condition that is no longer applicable as a result of the change; and

5. declares the requested change is not a Title I modification and will not exceed allowable emissions under the permit.

(c) The permit shield provisions of TAPCR 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4 (i)

C3. Administrative amendment.

(a) Administrative permit amendments to this permit shall be in accordance with 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.

(b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR 1200-03-9-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR 1200-03-09-.02(11)(e), TAPCR 1200-03-09-.02(11)(f) and TAPCR 1200-03-09-.02(11)(g) for significant permit modifications.

(c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

(a) The permittee may submit an application for a minor permit modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(ii).

(b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.

(c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

(d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

(a) The permittee may submit an application for a significant modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(iv).

(b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this source that is subject to the provisions of TAPCR 1200-03-09-.01 shall be governed by the following:

(a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.

(b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR 1200-03-09-.02(11)(f)4 or the significant modification route of TAPCR 1200-03-09-.02(11)(f)5(iv).

(c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d) 1(i)(V)

SECTION D

GENERAL APPLICABLE REQUIREMENTS

D1. **Visible emissions.** With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (6-minute average) except for one six minute period per one (1) hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize 6-minute averaging.

Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or his representative upon his request.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.02(1)

D2. **General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

D3. **Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR 1200-03-06.

D4. **General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

D5. **Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR 1200-03-07.

D6. **Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit Sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

D7. **Fugitive Dust.**

(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;

2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20.

TAPCR 1200-03-08

D8. **Open burning.** The permittee shall comply with the TAPCR 1200-03-04-.04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. **Asbestos.** Where applicable, the permittee shall comply with the requirements of 1200-03-11-.02(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-03-11-.02(d) and 40 CFR, Part 61

D10. **Annual certification of compliance.** The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are not subject to source-specific applicable requirements contained in State of Tennessee and U.S. EPA regulations. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)1 and compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for these conditions annually.

SECTION E

SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS

Facility Description: 05-0008 South Ingot South Remediation	South Ingot: South Ingot operations include three distinct emission units. Casting pit No. 1 includes three holding furnaces numbered 5, 6, and 7, and degassing units. Casting pit No. 3 includes two melting furnaces numbered 9 and 11, two holding furnaces numbered 10 and 12, and degassing units. Skim cooling and storage is also included. South Remediation: Insignificant activities only

Conditions E1 through E3-7 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment: Actual emissions basis.

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCE 05-0008 SOUTH INGOT

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	N/A	AEAR	Fee emissions include PM_{10}
PM_{10}	N/A	AEAR	Fee emissions are included above.
SO_2	N/A	AEAR	
VOC	N/A	AEAR	
NO_X	N/A	AEAR	
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAP WITHOUT A STANDARD)*			
VOC FAMILY GROUP	N/A	N/A	
NON-VOC GASEOUS GROUP	N/A	N/A	
PM FAMILY GROUP	N/A	N/A	

CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAP WITH A STANDARD)**			
VOC FAMILY GROUP	N/A	AEAR	40 CFR part 63 subpart RRR Dioxin/furan emissions (fee emissions are included in VOC above)
NON-VOC GASEOUS GROUP	N/A	AEAR	40 CFR part 63 subpart RRR Hydrogen chloride emissions (fee emissions are not included above)
PM FAMILY GROUP	N/A	N/A	
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE	N/A	N/A	

NOTES

AAP The Annual Accounting Period (AAP) is a twelve (12) consecutive month period that begins each July 1st and ends June 30th of the following year. The present Annual Accounting Period began July 1, 2015, and ends June 30, 2016. The next Annual Accounting Period begins July 1, 2016, and ends June 30, 2017.

N/A N/A indicates that no emissions are specified for fee computation.

AEAR AEAR indicates that an Actual Emissions Analysis is required to determine the actual emissions of:

(1) each regulated pollutant (Particulate matter, SO_2, VOC, NO_X and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),

(2) each pollutant group (VOC Family, Non-VOC Gaseous, and Particulate Family), and

(3) the **Miscellaneous HAP Category** under consideration during the **Annual Accounting Period.**

* **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the **VOC Family** group, **the Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, the **Miscellaneous HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

** **Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31. Each individual hazardous air pollutant is classified into one of three groups, the **VOC Family** group, **the Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. **For fee computation**, each individual hazardous air pollutant of the **Specific HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

*** **Category Of NSPS Pollutants Not Listed Above**: This category is made-up of each **N**ew **S**ource **P**erformance **S**tandard (**NSPS**) pollutant whose emissions are not included in the **PM, SO_2, VOC** or **NO_x** emissions from each source in this permit. **For fee computation**, each **NSPS pollutant not listed above** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

The permittee shall:

(1) Pay major source annual actual based emission fees, as requested by the responsible official, for each AAP by July 1 of each year.

(2) Prepare an actual emission analysis for each AAP (July 1 of each year through June 30 of the following year) in accordance with the above fee emissions summary table. The actual emission analysis shall include:

(a) the completed fee emissions summary table,

(b) each AEAR required by the above fee emissions summary table, and

(c) the records required by conditions E5-7, E6-3 and E7-3 of this permit. These records shall be used to complete the AEARs required by the above fee emissions summary table.

(3) Submit the actual emissions analysis at the time the fees are paid in full.

(4) Calculate the fee due based upon the actual emission analysis, and submit the payment on July 1st following the end of the annual accounting period. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Major sources may request an extension of time to file their emissions analysis with the Technical Secretary as specified in condition A8(c)5 of this permit. Emissions for regulated pollutants shall not be double counted as specified in condition A8(d) of this permit.

The actual emissions analysis shall be submitted to The Technical Secretary at the address below:

Division of Air Pollution Control (or electronic pdf copy to :Air.Pollution.Control@tn.gov)
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Payment of the fee due shall be submitted to the following address:

Tennessee Department of Environment and Conservation

Division of Fiscal Services
Consolidated Fee Section – APC
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave. 10th Floor
Nashville, TN 37243

TAPCR 1200-03-26-.02 (3) and (9), and 1200-03-09-.02(11)(e)1 (iii) and (vii)

E2. Reporting requirements

(a) Semiannual reports. Semiannual reports shall cover the 6-month periods from January 1 through June 30 and July 1 to December 31, and shall be submitted within 60 days after the end of the 6-month periods. All instances of deviations from permit requirements must be clearly identified in these reports and the reports must be certified by a responsible official.

These semiannual reports shall include:

(1) Reports of any monitoring, recordkeeping and calculated emission rates required by conditions E5-1, E6-1, E6-2 and E7-1 of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(2) The visible emission evaluation readings from condition E3-1 for all regulated stack emission of this permit if required. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.

(3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS**.

These reports must be certified by a responsible official consistent with condition B4 of this permit and shall be submitted to The Technical Secretary at the address in Condition E2(b) of this permit.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

(b) Annual compliance certification. The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D, & E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(1) The identification of each term or condition of the permit that is the basis of the certification;

(2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(3) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and

(4) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* Excursion shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** Exceedance shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the

applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

The certification shall cover the 12-month period from **July 1** to **June 30,** and shall be submitted within 60 days after the 12-month period ends.

These certifications shall be submitted to: **TN APCD** and EPA

Hard Copy to:

Knoxville Environmental Field Office
Tennessee Division of Air Pollution Control
3711 Middlebrook Pike
Knoxville, TN 37921

Adobe Portable Document Format (PDF) Copy to:

APC.KnoxEFO@tn.gov

Air and EPCRA Enforcement Branch
US EPA Region IV
61 Forsyth Street, SW
Atlanta, Georgia 30303

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 68, No.124, June 27, 2003, pages 38518 through 38523

E3. General requirements applicable to permitted facility.

E3-1. Visible emissions from all stacks at south ingot shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average).

TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this opacity limitation shall be certified through utilization of the Division's Opacity Matrix dated June 18, 1996, amended September 11, 2013, using EPA Method 9 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring.

E3-2. Routine maintenance, as required to maintain specified emission limits in this permit, shall be performed on the air pollution control device(s). Maintenance records shall be recorded in a suitable permanent form and kept available for inspection by the Division. These records must be retained for a period of not less than five years.

TAPCR 1200-03-09

E3-3. Logs and records specified in this permit shall be made available upon request by the Technical Secretary or his representative and shall be retained for a period of not less than five years unless otherwise noted. The logs contained in this permit are based on a recommended format. Any logs that have an

alternative format may be utilized provided they contain the same information that is required.

TAPCR 1200-03-10-.02(2)(a)

E3-4. Upon the malfunction/failure of any emission control device(s) serving this source, the operation of the process(es) served by the device(s) shall be regulated by Chapter 1200-03-20 of the Tennessee Air Pollution Control Regulations.

E3-5. Record keeping requirements for this facility, including all data and calculations, must be updated and maintained based on the following schedule:

Record Keeping Type	Update Requirement
Monthly Log	Recorded within 30 days after the end of the month
Weekly Log	Recorded within 7 days after the end of the week
Daily Log	Recorded within 7 days after the end of the day

TAPCR 1200-03-10-.02(2)(a)

E3-6. The permittee listed various insignificant and exempt activities in their Title V Applications per Rule 1200-3-9-.04(5). Additional insignificant activities may be added and operated at any time with the provision that a written notification shall be submitted to the Technical Secretary including an updated APC V.2 application form along with a truth, accuracy, and completeness statement signed by a responsible official.

TAPCR 1200-03-09

E3-7. Due allowance for failure to monitor shall be made during any period of monitoring system malfunction, provided that the source owner or operator shows, to the satisfaction of the Technical Secretary, that the malfunction was unavoidable and is being repaired as expeditiously as practicable and that a log of all such malfunctions is being kept by the permittee, including time malfunction began, when it was detected, what was wrong, what was done to correct the malfunction, and when the malfunction was corrected.

TAPCR 1200-03-10-.02(1)(e)

E3-8. Identification of Responsible Official, Technical Contact, and Billing Contact

a) The applications that were utilized in the preparation of this permit are dated April 30, 2013, and June 26, 2015, and signed by Responsible Official (and Billing Contact) Ken A. McMillen, Location Manager of the permitted facility. If this person terminates his/her employment or is assigned different duties such that he/she is no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.

b) The application that was utilized in the preparation of this permit is dated June 26, 2015, and identifies Alisa Hatmaker, Environmental Engineer as the Principal Technical Contact for the permitted facility. If this person terminates his/her employment or is assigned different duties such that he/she is no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.

TAPCR 1200-03-09

E4. National Emission Standards for Hazardous Air Pollutants (NESHAP) for Secondary Aluminum Production Plant (40 CFR Part 63 Subpart RRR) Requirements for Casting Pits No. 1 and No. 3 which Include Group 1 Furnaces and In-line Fluxers

Emission Units Subject to Subpart RRR

Emission Units	Subject To:

Holding Furnaces No. 5, 6, 7, 10 and 12	Group 1 Furnace, Reactive Flux Addition, No Controls
Melting Furnaces No. 9 and 11	Group 1 Furnace, Reactive Flux Addition, No Controls
Inline Degassers Pit 1 North &South, Pit 3 North & South	In-line Fluxer, Reactive Flux Addition, No Controls

Emission Standards Group 1 Furnaces

E4-1. Particulate matter emissions from group 1 furnaces shall not exceed 0.40 pounds of particulate matter (PM) per ton of aluminum produced. Alcoa is using production rate rather than feed/charge rate pursuant to 40 CFR §63.1506(d)(3).

40 CFR §63.1505(i)(1)

Compliance Method: Compliance with this emission limit shall be demonstrated by a performance test. The results from the performance tests and operation of the units within the operating parameters established during the performance test will assure continuous compliance. The operating parameters are included in the current OM&M Plan (Attachment 4). Records of the operating parameters must be maintained as described in the OM&M plan. The results and dates of the performance tests are noted below:

Unit(s) [1]	Test Date	PM Results (lb/hr)	PM Emission Factor (lb/ton)
Melting Furnace #11 (Includes: #9)	October 2015	0.319	0.023
Holding Furnace #12 (Includes: #5, #6, #7, & #10)	October 2015	1.01	0.044
1 – Representative emission units were tested pursuant to 40 CFR §63.1511(f)			

E4-2. Dioxins and furans (D/F) emissions from group 1 furnaces shall not exceed 15 µg of D/F TEQ (The international method of expressing toxicity equivalents for dioxins and furans as defined in "Interim Procedures for Estimating Risks Associated with Exposure to Mixtures of Chlorinated Dibenzo-p-Dioxins and –Dibenzofurans (CDDs and CDFs) and 1989 Update)" per mega grams of aluminum produced. Alcoa is using production rate rather than feed/charge rate pursuant to 40 CFR §63.1506(d)(3).

40 CFR §63.1505(i)(3)

Compliance Method: Compliance with this emission limit shall be demonstrated by a performance test. The results from the performance tests and operation of the units within the operating parameters established during the performance test will assure continuous compliance. The operating parameters are included in the current OM&M Plan (Attachment 4). Records of the operating parameters must be maintained as described in the OM&M plan. The results and dates of the performance tests are noted below:

Unit(s) [1]	Test Date	Results (µg of D/F TEQ /hr)	Emission Factor (µg of D/F TEQ/Mg)
Melting Furnace #11 (Includes: #9)	October 2015	NA	0.173
Holding Furnace #12 (Includes: #5, #6, #7, & #10)	Not Required [2]	NA	NA
1 – Representative emission units were tested pursuant to 40 CFR §63.1511(f) 2 – Holding furnaces process only clean charge, 40 CFR §63.1512(e)(2)			

E4-3. Hydrogen chloride (HCl) emissions from group 1 furnaces shall not exceed 0.40 pounds of HCl per ton of aluminum produced. Alcoa is using production rate rather than feed/charge rate pursuant to 40 CFR §63.1506(d)(3).

40 CFR §63.1505(i)(4)

Compliance Method: Compliance with this emission limit shall be demonstrated by a performance test. The results from the performance tests and operation of the units within the operating parameters established during the performance test will assure continuous compliance. The operating parameters are included in the current OM&M Plan (Attachment 4). Records of the operating parameters must be maintained as described in the OM&M plan. The results and dates of the performance tests are noted below:

Unit(s) [1]	Test Date	HCl Results (lb/hr)	HCl Emission Factor (lb/ton)
Melting Furnace #11 (Includes: #9)	October 2015	0.047	0.0035
Holding Furnace #12 (Includes: #5, #6, #7, & #10)	October 2015	0.572	0.0242
1 – Representative emission units were tested pursuant to 40 CFR §63.1511(f)			

Emission Standards Inline Fluxers (Degassing Units)

E4-4. Hydrogen chloride (HCl) emissions from inline fluxers shall not exceed 0.04 pounds of HCl per ton of aluminum produced. Alcoa is using production rate rather than feed/charge rate pursuant to 40 CFR §63.1506(d)(3).

40 CFR §63.1505(j)(1)

Compliance Method: Compliance with this emission limit shall be demonstrated by a performance test. The results from the performance tests and operation of the units within the operating parameters established during the performance test will assure continuous compliance. The operating parameters are included in the current OM&M Plan (Attachment 4). Records of the operating parameters must be maintained as described in the OM&M plan. The results and dates of the performance tests are noted below:

Unit(s) [1]	Test Date	HCl Results (lb/hr)	HCl Emission Factor (lb/ton)
Inline Degasser Pit 3 North Includes: Inline Degassers Pit 1 North &South, Pit 3 South	October 2015	0.00065	0.0000085
1 – Representative emission units were tested pursuant to 40 CFR §63.1511(f)			

E4-5. Particulate matter (PM) emissions from inline fluxers shall not exceed 0.01 pounds of particulate matter per ton of aluminum produced. Alcoa is using production rate rather than feed/charge rate pursuant to 40 CFR §63.1506(d)(3).

40 CFR §63.1505(j)(2)

Compliance Method: Compliance with this emission limit shall be demonstrated by a performance test. The results from the performance tests and operation of the units within the operating parameters established during the performance test will assure continuous compliance. The operating parameters are included in the current OM&M Plan (Attachment 4). Records of the operating parameters must be maintained as described in the OM&M plan. The results and dates of the performance tests are noted below:

Unit(s) [1]	Test Date	PM Results (lb/hr)	PM Emission Factor (lb/ton)
Inline Degasser Pit 3 North Includes: Inline Degassers Pit 1 North &South, Pit 3 South	October 2015	0.0203	0.00027
1 – Representative emission units were tested pursuant to 40 CFR §63.1511(f)			

Operating Requirements

E4-6. The owner or operator must provide and maintain easily visible labels posted at each group 1 furnace and inline fluxer that identifies the applicable emission limits and means of compliance. The labels shall include the type of affected source or emission unit and the applicable operational standards and work practices. This includes, but is not limited to, the type of charge to be used for a furnace, flux materials and addition practices, and the applicable

operating parameter ranges and requirements as incorporated in the OM&M (operation, maintenance, and monitoring) plan.

40 CFR §63.1506(b)

Compliance Method: Maintain labels as required.

E4-7. The owner or operator shall install and operate a device that measures and records or otherwise determines the weight of throughput for each operating cycle or time period used in the performance test and operate each weight measurement system or other weight determination procedure in accordance with the OM&M plan.

40 CFR §63.1506(d)

Compliance Method: Install and operate a device as required.

E4-8. The owner or operator of a group 1 furnace without an add-on air pollution control device must maintain the total reactive chlorine flux injection rate for each operating cycle or time period used in the performance test at or below the average rate established during the performance test.

In addition, the owner or operator must operate each furnace in accordance with the work practice/pollution prevention measures documented in the OM&M plan and within the parameter values or ranges established in the OM&M plan.

The current OM&M plan (Attachment 4) identifies the total reactive injection rate for all group 1 furnaces.

40 CFR §63.1506(n)

Compliance Method: Compliance for the total reactive flux injection rate shall be assured by maintaining records of flux addition and aluminum produced that shows compliance with the rate established during the performance test and documented in the current OM&M plan.

Compliance with the work practice/pollution prevention measures shall be assured by following the OM&M plan.

E4-9. When a process parameter deviates from the value or range established during the performance test and incorporated in the OM&M plan, the owner or operator must initiate corrective action. Corrective action must restore operation of the affected source or emission unit to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices or minimizing emissions. Corrective actions taken must include following up actions necessary to return the process parameter levels to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of the deviation.

40 CFR §63.1506(p)

Compliance Method: Compliance shall be assured by following the current OM&M plan.

Monitoring Requirements

E4-10. The owner or operator must prepare and implement for each new or existing affected source and emission unit, a written operation, maintenance, and monitoring (OM&M) plan. The owner or operator of any new affected source must submit the OM&M plan to the Technical Secretary within 90 days after a successful initial performance test. The plan must be accompanied by a written certification by the owner or operator that the OM&M plan satisfies all requirements of 40 CFR §63.1510(b). The owner or operator must comply with all of the provisions of the OM&M plan as submitted to the Technical Secretary, unless and until the plan is revised in accordance with the following procedures. If the Technical Secretary determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of 40 CFR §63.1510(b), the owner or operator must promptly make

all necessary revisions and resubmit the revised plan. If the owner or operator determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the Permittee submits a description of the changes and a revised plan incorporating them to the Technical Secretary. Each plan must contain the information in 40 CFR §63.1510(b)(1) through 8.

40 CFR §63.1510(b)

Compliance Method: Compliance shall be assured by developing and maintaining an OM&M plan. The current OM&M plan is included in Attachment 4.

E4-11. The owner or operator must inspect the labels for each group 1 furnace and inline fluxer at least once per calendar month to confirm that posted labels are intact and legible.

40 CFR §63.1510(c)

Compliance Method: Compliance with this requirement shall be assured by performing and recording the inspections at least once per month.

E4-12. The owner or operator must install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. Feed/charge or aluminum production within SAPUs must be measured and recorded on an emission unit-by-emission unit basis.

The accuracy of the weight measurement device or procedure must be ±1 percent of the weight being measured.

The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.

40 CFR §63.1510(e)

Compliance Method: Compliance shall be assured by installing and maintaining the measuring device as noted and by maintaining documentation from the manufacturer confirming the accuracy of the measuring device.

E4-13. The owner or operator must install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit (inline degassers Pit #1 and #3).

The monitoring system must record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test.

The accuracy of the weight measurement device or procedure must be ±1 percent of the weight of the reactive component of flux being measured.

The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.

The owner or operator must calculate and record the gaseous or liquid reactive flux injection rate (lb/ton) for each operating cycle or time period used in the performance test using the procedures in 40 CFR §63.1512(o).

The owner or operator must record, for each 15-minute block period during each operating cycle or time period used in the performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of gaseous or liquid reactive flux other than chlorine and solid reactive flux (for group 1 furnaces).

The owner or operator must calculate and record the total reactive flux injection rate (lb/ton) for each operating cycle or time period used in the performance test using the procedures in 40 CFR §63.1512(o).

40 CFR §63.1510(j)

Compliance Method: Compliance shall be assured by installing and maintaining the measuring device as noted and by maintaining documentation from the manufacturer confirming the accuracy of the measuring device.

E4-14. The owner or operator must develop, in consultation with the Technical Secretary, a written site-specific monitoring plan. Specific requirements for the a site-specific monitoring plan are detailed in 40 CFR §63.1510(o),

The current site-specific monitoring plan is included in the current OM&M plan located in Attachment 4.

40 CFR §63.1510(o)

Compliance Method: Compliance shall be assured by developing and maintaining a site-specific monitoring plan.

E4-15. The owner or operator must develop a scrap inspection program as identified in 40 CFR §63.1510(p). The scrap inspection program must include the monitoring requirements of 40 CFR §63.1510(q).

The current scrap inspection program is included in the current OM&M plan located in Attachment 4.

40 CFR §63.1510(p) and §631510(q)

Compliance Method: Compliance shall be assured by developing and maintaining a scrap inspection program.

Other NESHAP Requirements

E4-16. The owner or operator must conduct performance tests as needed by following the requirements in 40 CFR §63.1511and §63.1512.

40 CFR §63.1511 and §63.1512

Compliance Method: Compliance with this requirement shall be assured by conducting the performance tests as required.

E4-17. The owner or operator must maintain records and submit reports in accordance with 40 CFR §63.1515, §63.1516 and §63.1517.

40 CFR §63.1515, §63.1516 and §63.1517

Compliance Method: Compliance with this requirement shall be assured by maintaining the required records and by submitted semiannual reports and periodic reports as required.

E4-18. The owner or operator must, in addition to the NESHAP requirements that are noted in this permit, following all relevant requirement in 40 CFR part 63 subpart RRR and subpart A, as noted in appendix A of subpart RRR.

40 CFR part 63 subpart RRR

Compliance Method: Compliance shall be assured by following all relevant requirement in 40 CFR part 63 subpart A.

E5. Emission Source

05-0008-21	Source Identification:	Casting Pit No. 1 No. 5 Holding Furnace with Degassing Unit No. 6 Holding Furnace with Degassing Unit No. 7 Holding Furnace with Degassing Unit No. 5 Degassing Unit No. 6 Degassing Unit
	Stacks:	TNHFRN0103_EP TNHFRN0104_EP TNHFRN0101_EP
	Control Equipment:	None
	Heat Input	120 million Btu per hour

Conditions E5-1 through E5-7 apply to source 05-0008-21.

E5-1. Emissions from this source shall not exceed the rates in the following table:

Pollutant	Emission Rate (daily average)	Regulatory Basis
Particulate Matter (TSP)	0.02 grains per dry standard cubic foot (14.1 lbs/hr), and 28.8 tons per all intervals of 12 consecutive months	TAPCR 1200-03-07-.04(1) TAPCR 1200-03-07-.01(5), agreement letter dated March 22, 2000, to avoid PSD review
Sulfur Dioxide	3.0 lbs/hr	TAPCR 1200-03-14-.03(5)
Carbon Monoxide	10.08 lbs/hr	TAPCR 1200-03-07-.07(2)
Volatile Organic Compounds	NA	TAPCR 1200-03-09-.01(5)(b)10.
Nitrogen Oxides	10.0 lbs/hr	TAPCR 1200-03-07-.07(2)
Chlorine (Cl_2)	3.3 lbs/hr	TAPCR 1200-03-07-.07(2)
Hydrogen Chloride (HCl)	10.3 lbs/hr	TAPCR 1200-03-07-.07(2)
Total Fluorides	0.8 lbs/hr	TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with the emission rates of particulate matter, hydrogen chloride, total fluorides and chlorine shall be assured through daily recordkeeping of aluminum produced, salt usage and chlorine usage and the following emission factors. The average hourly emission rates (daily average)

shall be determined and recorded for each day of operation. These records shall be maintained on-site for a period of not less than 5 years and made available to the Technical Secretary or his/her representative upon request.

Note: The limit for Volatile organic compound (VOC) emissions from this source has been removed. Alcoa has an active PAL (plant wide applicability limitation) for VOCs of 1,715.92 tons during all intervals of 12 consecutive months, permit 967460, which was effective December 1, 2013.

Unit(s) [1] Casting Pit #1	Pollutant	Emission Factor	Reference
Holding Furnace #5	Particulate Matter	0.044 lb / ton of Al	2015 Performance Test
Holding Furnace #6	Particulate Matter	0.044 lb / ton of Al	2015 Performance Test
Holding Furnace #7	Particulate Matter	0.044 lb / ton of Al	2015 Performance Test
North Inline Degasser	Particulate Matter	0.0.00027 lb / ton of Al	October 2015 Performance Test
South Inline Degasser	Particulate Matter	0.0.00027 lb / ton of Al	October 2015 Performance Test
Holding Furnace #5	Hydrogen Chloride	0.0242 lb / ton of Al	2015 Performance Test
Holding Furnace #6	Hydrogen Chloride	0.0242 lb / ton of Al	2015 Performance Test
Holding Furnace #7	Hydrogen Chloride	0.0242 lb / ton of Al	2015 Performance Test
North Inline Degasser	Hydrogen Chloride	0.0000085 lb / ton of Al	October 2015 Performance Test
South Inline Degasser	Hydrogen Chloride	0.0000085 lb / ton of Al	October 2015 Performance Test
Holding Furnace #5	Total Fluorides	0.0032 lb/ ton of Al	November 2000 Performance Test
Holding Furnace #6	Total Fluorides	0.0032 lb/ ton of Al	November 2000 Performance Test
Holding Furnace #7	Total Fluorides	0.0032 lb/ ton of Al	November 2000 Performance Test
Holding Furnace #5	Chlorine	0.0001 lb / lb of Cl_2 (salt)	August 2001 Performance Test
Holding Furnace #6	Chlorine	0.0001 lb / lb of Cl_2 (salt)	August 2001 Performance Test
Holding Furnace #7	Chlorine	0.0001 lb / lb of Cl_2 (salt)	August 2001 Performance Test
North Inline Degasser	Chlorine	0.0001 lb / lb of Cl_2 (gas)	August 2001 Performance Test
South Inline Degasser	Chlorine	0.0001 lb / lb of Cl_2 (gas)	August 2001 Performance Test

1 - A representative emission unit (Holding Furnace #12 & Pit #3 North Degasser) was tested pursuant to 40 CFR §63.1511(f)

Compliance Method: Compliance with the emission rates of volatile organic compounds, nitrogen oxides, sulfur dioxide and carbon monoxide shall be assured through daily recordkeeping of natural gas usage and the following emission factors. The average hourly emission rates (daily average) shall be determined and recorded for each day of operation. These records shall be maintained on-site for a period of not less than 5 years and made available to the Technical Secretary or his/her representative upon request.

Unit(s) Casting Pit #1	Pollutant	Emission Factor	Reference
Holding Furnace #5 #6, & #7 and North & South Inline Degassers	Volatile Organic Compounds	5.5 lb / million cubic feet of natural gas	AP-42, Attachment 2
Holding Furnace #5 #6, & #7 and North & South Inline Degassers	Nitrogen Oxides	55 lb / million cubic feet of natural gas	September 2001 Performance Test
Holding Furnace #5 #6, & #7 and North & South Inline Degassers	Sulfur Dioxide	0.6 lb / million cubic feet of natural gas	AP-42, Attachment 2
Holding Furnace #5 #6, & #7 and North & South Inline Degassers	Carbon Monoxide	84 lb / million cubic feet of natural gas	AP-42, Attachment 3

E5-2. Chlorine (Cl_2) used for filter box fluxing shall not exceed 40 standard cubic feet per hour not to exceed 468 standard cubic feet per day.

TAPCR 1200-03-07-.07(2)

Compliance Method: A daily record shall be kept recording the chlorine usage for this source. This record shall be maintained at the source location and kept for inspection by the Technical Secretary or his representative for a period of not less than five (5) years.

E5-3. A daily record of the amount of bulk salt fluxes used along with the composition shall be maintained at the source location.

TAPCR 1200-03-09, Permit 952604P

Compliance Method: A daily record shall be kept recording the usage for bulk salt flux at this source. Bulk salt fluxes records included the flux composition shall be maintained at the source location and kept for inspection by the Technical Secretary or his representative for a period of not less than five (5) years.

E5-4. The exhaust gas from Holding Furnace No. 5 shall be discharged unobstructed, vertically upwards to the ambient air from a stack with an inside stack exit measurement of 42 inches by 75.96 inches, within a measurement accuracy of ± 10%, not less than 71 feet above ground level.

TAPCR 1200-03-09, Permit 952604P

Compliance Method: The Technical Secretary may require the permittee to prove compliance with the stack dimensions.

E5-5. The exhaust gas from Holding Furnaces No. 6 and 7 shall be discharged unobstructed, vertically upwards to the ambient air from a stack with an inside

stack exit measurement of 45 inches by 72 inches, within a measurement accuracy of ± 10%, not less than 91 feet above ground level.

TAPCR 1200-03-09, Permit 952604P

Compliance Method: The Technical Secretary may require the permittee to prove compliance with the stack dimensions.

E5-6. The maximum heat input for this source shall not exceed 120 million British Thermal Units (Btu) per hour and only natural gas or propane shall be used as fuel.

TAPCR 1200-03-09, Permit 952604P

Compliance Method: 120 million Btu per hour is the design capacity of these furnaces. Compliance with this condition shall be verified by records of burner design capacity. Records that readily assure compliance with this condition shall be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. This record shall be retained for a period of not less than five (5) years.

E5-7. For fee purposes, the permittee shall calculate the actual emissions of particulate matter, sulfur dioxide, volatile organic compounds (VOC), nitrogen oxides, chlorine and hydrogen chloride for the current annual accounting period. Actual emissions of the noted compounds shall be calculated based on the emission factors as noted in condition E5-1.

The calculated emissions and supporting documentation shall be submitted as required by condition E1.

TAPCR 1200-03-26-.02(9)

E6 Emission Source

05-0008-57	Source Identification:	Casting Pit No. 3 No. 9 Melting Furnace No. 10 Holding Furnace with Degassing Unit No. 11 Melting Furnace No. 12 Holding Furnace with Degassing Unit
	Stacks:	TMNFRN0108_EP TMNFRN0105_EP TMNFRN0107_EP TMNFRN0106_EP
	Control Equipment:	None
	Heat Input:	No. 9 Melting Furnace, 120 million Btu per hour No. 10 Holding Furnace with Degassing Unit, 33.30 million Btu per hour No. 11 Melting Furnace, 120 million Btu per hour No. 12 Holding Furnace with Degassing Unit, 33.30 million Btu per hour

Conditions E6-1 through E6-3 apply to source 05-0008-57.

E6-1. Emissions from this source shall not exceed the rates in the following table:

Pollutant	Emission Rate (daily average)	Regulatory Basis
Particulate Matter (TSP)	8.6 lbs/hr and 36.67 tons per all intervals of 12 consecutive months	TAPCR 1200-03-07-.01(5) TAPCR 1200-03-09-.01(4), agreement letter dated January 4, 1999, to avoid PSD review
Chlorine (Cl_2)	14.8 lbs/hr	TAPCR 1200-03-07-.07(2)
Hydrogen Chloride (HCl)	11.4 lbs/hr	TAPCR 1200-03-07-.07(2)
Dioxins/furans (D/F)	0.012 lb/hr	See condition E4-2 for compliance with D/F emissions
Gaseous Fluorides	0.48 lbs/hr	TAPCR 1200-03-07-.07(2)

Compliance Method: Compliance with the emission rates of particulate matter, hydrogen chloride, total fluorides and chlorine shall be assured through daily recordkeeping of aluminum produced, salt usage and chlorine usage and the following emission factors. The average hourly emission rates (daily average) and 12 consecutive month totals shall be determined and recorded for each day or month of operation. These records shall be maintained on-site for a period of not less than 5 years and made available to the Technical Secretary or his/her representative upon request.

Unit(s) [1] Casting Pit #3	Pollutant	Emission Factor	Reference
Melting Furnace #9	Particulate Matter	0.023 lb / ton of Al	2015 Performance Test
Melting Furnace #11	Particulate Matter	0.023 lb / ton of Al	2015 Performance Test
Holding Furnace #10 with Degassing Unit	Particulate Matter 2	0.044 lb / ton of Al	2015 Performance Test
Holding Furnace #12 with Degassing Unit	Particulate Matter 2	0.044 lb / ton of Al	2015 Performance Test
Melting Furnace #9	Hydrogen Chloride	0.0035 lb / ton of Al	2015 Performance Test
Melting Furnace #11	Hydrogen Chloride	0.0035 lb / ton of Al	2015 Performance Test
Holding Furnace #10 with Degassing Unit	Hydrogen Chloride 2	0.0242 lb / ton of Al	2015 Performance Test
Holding Furnace #12 with Degassing Unit	Hydrogen Chloride 2	0.0242 lb / ton of Al	2015 Performance Test
Melting Furnace #9	Total Fluorides	0.005 lb / ton of Al	November 2000 Performance Test
Melting Furnace #11	Total Fluorides	0.005 lb/ ton of Al	November 2000 Performance Test
Holding Furnace #10 with Degassing Unit	Total Fluorides	0.00078 lb/ ton of Al	November 2000 Performance Test
Holding Furnace #12 with Degassing Unit	Total Fluorides	0.00078 lb/ ton of Al	November 2000 Performance Test
Melting Furnace #9	Chlorine	0.011 lb / lb of Cl_2 (salt)	August 2001 Performance Test
Melting Furnace #11	Chlorine	0.011 lb / lb of Cl_2 (salt)	August 2001 Performance Test
Holding Furnace #10	Chlorine	0.0001 lb / lb of Cl_2 (salt)	August 2001 Performance Test
Holding Furnace #12	Chlorine	0.0001 lb / lb of Cl_2 (salt)	August 2001 Performance Test
#10 Degasser	Chlorine	0.0001 lb / lb of Cl_2 (gas)	August 2001 Performance Test
#12 Degasser	Chlorine	0.0001 lb / lb of Cl_2 (gas)	August 2001 Performance Test
1 – A representative emission unit (Holding Furnace #12, Pit #3 North Degasser, and Melting Furnace #11) was tested pursuant to 40 CFR §63.1511(f)			

2 – Emissions were combined from individual performance tests for the degasser and the holding furnace.

E6-2. Emissions from this source shall not exceed the rates in the following table:

Pollutant	Emission Rate	Regulatory Basis
Sulfur Dioxide	3.0 lbs/hr and 13.4 tons per all intervals of 12 consecutive months	TAPCR 1200-03-14-.03(5)
Carbon Monoxide	11.2 lbs/hr and 49.06 tons per all intervals of 12 consecutive months	TAPCR 1200-03-07-.07(2) and TAPCR 1200-03-07-.05(1) TAPCR 1200-03-09-.01(4), agreement letter dated January 4, 1999, to avoid PSD review
Volatile Organic Compounds	NA	TAPCR 1200-03-09-.01(5)(b)10.
Nitrogen Oxides	34.94 lbs/hr and 153.04 tons per all intervals of 12-consecutive months	TAPCR 1200-03-07-.07(2) and TAPCR 1200-03-07-.05(1) TAPCR 1200-03-09-.01(4), agreement letter dated January 4, 1999, to avoid PSD review

Compliance Method: Compliance with the emission rates of volatile organic compounds, nitrogen oxides, sulfur dioxide and carbon monoxide shall be assured through daily recordkeeping of natural gas usage and aluminum production and the following emission factors. The average hourly emission rates (daily average) and 12 consecutive month totals shall be determined and recorded for each day or month of operation. These records shall be maintained on-site for a period of not less than 5 years and made available to the Technical Secretary or his/her representative upon request.

Note: The limit for Volatile organic compound (VOC) emissions from this source has been removed. Alcoa has an active PAL (plant wide applicability limitation) for VOCs of 1,715.92 tons during all intervals of 12 consecutive months, permit 967460, which was effective December 1, 2013.

Unit(s) [1] Casting Pit #3	Pollutant	Emission Factor	Reference
Melting Furnace #9 & #11	Volatile Organic Compounds	0.032 lb / ton of Al	August 1994 Performance Test
Holding Furnace #10 & #12	Volatile Organic Compounds	0.04 lb / ton of Al	August 1994 Performance Test
Holding Furnace #10 & #12	Nitrogen Oxides	55 lb / million cubic feet of natural gas	August 2001 Performance Test
Melting Furnace #9 & #11	Nitrogen Oxides	100 lb / million cubic feet of natural gas	AP-42, Attachment 3
Holding Furnace	Sulfur Dioxide	0.6 lb / million	AP-42, Attachment

#10 & #12 and Melting Furnace #9 & #11		cubic feet of natural gas	2
Holding Furnace #10 & #12 and Melting Furnace #9 & #11	Carbon Monoxide	84 lb / million cubic feet of natural gas	AP-42, Attachment 3
1 – A representative emission unit (Holding Furnace #12, Pit #3 North Degasser, and Melting Furnace #11) was tested pursuant to 40 CFR §63.1511(f)			

E6-3. For fee purposes, the permittee shall calculate the actual emissions of particulate matter, sulfur dioxide, volatile organic compounds, nitrogen oxides, chlorine, hydrogen chloride and total fluorides for the current annual accounting period. Actual emissions of the noted compounds shall be calculated based on the emission factors as noted in conditions E6-1 and E6-2.

The calculated emissions and supporting documentation shall be submitted as required by condition E1.

TAPCR 1200-03-26-.02(9)

E7 Emission Source

05-0008-72	Source Identification:	Skim Cooling and Storage Building 81B
	Stacks:	Not applicable
	Control Equipment:	None

Conditions E7-1 through E7-3 apply to source 05-0008-72.

E7-1. Particulate matter (TSP) emitted from this source shall not exceed 8.0 lb/hr based on a daily average.

TAPCR 1200-3-7-.01(5), Letter of Agreement dated May 24, 1996

Compliance Method: A daily record shall be kept for this source recording tons of aluminum processed per day through Pit #1 and Pit #3, and the number of operating hours per day. As determined from month end accounting reports, monthly net loss percentages and daily production rate for Pit #1 and Pit #3 shall be used to determine daily net melt loss. Compliance with the pounds per hour particulate matter emission limitation is assured by utilizing the daily melt loss and the 5.54 pounds of particulate matter emissions per ton of melt loss emission factor developed for this source from stack testing. The daily emissions of particulate matter will be averaged over the daily operating hours to show compliance with the pound per hour limitation.

Particulate matter emission rate (lb/hr) = [(W Melt Loss) x (PRSkimEF) / OH]

Where:

W Melt Loss = Calculated daily net melt loss of aluminum casting operations at Pit #1 and Pit #3 using monthly net melt loss percentages and daily production rate for Pit #1 and Pit #3 (tons per day)

PRSkimEF = Process rate particulate matter emission factor developed from stack test data conducted in April 1995

(lb/ton of calculated daily net melt loss) [5.54 pounds of particulate matter emitted per ton of net melt loss]

OH = daily operating hours

E7-2. The minimum flow rate of exhaust/ventilation system serving this source shall not be less than 1,000 dry standard cubic feet per minute (dscfm)

TAPCR 1200-03-09, Permit 744463P

Compliance Method: The Technical Secretary may require the permittee to prove compliance with this requirement.

E7-3. For fee purposes, the permittee shall calculate the actual emissions of particulate matter for the current annual accounting period. Actual emissions of the noted compounds shall be calculated based on the emission factor as noted in condition E7-1.

The calculated emissions and supporting documentation shall be submitted as required by condition E1.

TAPCR 1200-03-26-.02(9)

END OF PERMIT NUMBER: 570521

ATTACHMENT 1
OPACITY MATRIX DECISION TREE for VISIBLE EMISSION EVALUATION METHOD 9

Dated June 18, 1996
Amended September 11, 2013

Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants
Particulates, VOC, CO, SO_2, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

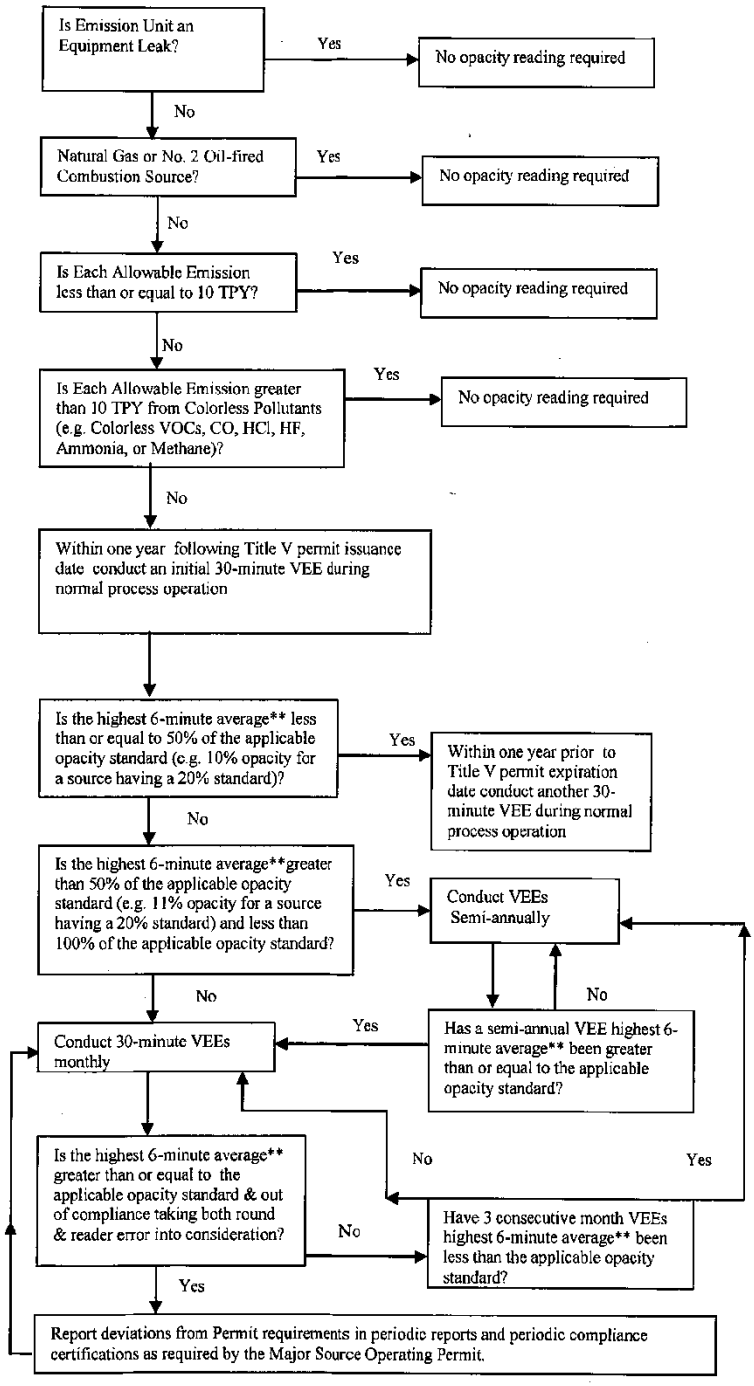
Reader Error
EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards:
The TAPCD guidance is to declares non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

EPA Method 9, NSPS or NESHAPS stipulate opacity standards:
EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
Amended September 11, 2013



ATTACHMENT 2

Section 1.4 of *AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*

NATURAL GAS COMBUSTION

Table 1.4-2

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION[a]

Pollutant	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
CO_2[b]	120,000	A
Lead	0.0005	D
N_2O (Uncontrolled)	2.2	E
N_2O (Controlled-low-NO_x burner)	0.64	E
PM (Total)[c]	7.6	D
PM (Condensable)[c]	5.7	D
PM (Filterable)[c]	1.9	B
SO_2[d]	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. To convert from $lb/10^6$ scf to 1b/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

[b] Based on approximately 100% conversion of fuel carbon to CO_2. $CO_2[lb/10^6$ scf] = (3.67) (CON) (C)(D), where CON = fractional conversion of fuel carbon to CO_2, C = carbon content of fuel by weight (0.76), and D = density of fuel, $4.2x10^4$ $lb/10^6$ scf.

[c] All PM (total, condensible, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM_{10}, $PM_{2.5}$ or PM_1 emissions. Total PM is the sum of the filterable PM and condensible PM. Condensible PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

[d] Based on 100% conversion of fuel sulfur to SO_2.
Assumes sulfur content is natural gas of 2,000 grains/10^6 scf. The SO_2 emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO_2 emission factor by the ratio of the site-specific sulfur content (grains/10^6 scf) to 2,000 grains/10^6 scf.

ATTACHMENT 3

Section 1.4 of *AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*

NATURAL GAS COMBUSTION

Table 1.4-1

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION[a]

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO_x[b]		CO	
	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating	Emission Factor ($lb/10^6$ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS)[c]	280	A	84	B
Uncontrolled (Post-NSPS)[c]	190	A	84	B
Controlled - Low NO_x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO_x burners	50	D	84	B
Controlled - Low NO_x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

[a] Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from $lb/10^6$ scf to $kg/10^6$ m^3, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from $lb/10^6$ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. SCC = Source Classification Code. ND = no data. NA = not applicable.

[b] Expressed as NO_2. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

[c] NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17,

1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984

ATTACHMENT 4

OPERATION, MAINTENANCE and MONITORING PLAN

November 24, 2015

National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production Plants

Tennessee Operations

South Ingot Facility
Operation, Maintenance and Monitoring Plan

ENV-205

Document Manager: A. Hatmaker

Prepared By:

Alcoa Inc. – Tennessee Operations
2300 North Wright Rd.
Alcoa, Tennessee 37701

November 24, 2015

Note: This is considered an uncontrolled document unless it is being viewed on-line from the Tennessee Operations Environmental Homepage.

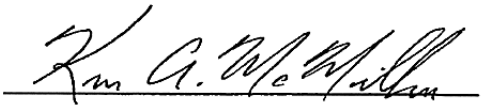
OM&M Plan Revision History

Plan Description	Prepared By	Date	Approved By	Date
Original Plan	Wes Capps	3/24/03	John Kincaid	3/24/03
Revision 1	Chris Moore	8/28/06	John Kincaid	8/28/06
Revision 2	Chris Moore	4/02/07	John Kincaid	4/02/07
Revision 3	Chris Moore	9/30/09	John Kincaid	9/30/09
Revision 4	Chris Moore	12/16/10	John Kincaid	12/16/10
Revision 5	Chris Moore	3/7/12	John Kincaid	3/7/12
Revision 6	Chris Moore	9/24/12	John Kincaid	9/24/12
Revision 7	Alisa Hatmaker	11/24/15	Ken A. McMillen	11/24/15

Note that the Secondary Aluminum NESHAP requires revised plans to be submitted to and approved by the Administrator prior to implementing at the facility. Any OM&M revisions must be noted and summarized in the Semi-Annual Secondary Aluminum NESHAP Excess Emissions/Summary Report.

OMM Plan Certification

The OM&M plan satisfies all requirements of 40 CFR 63 Subpart RRR as applicable to the facility. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Signature of Responsible Official: 

Name of Responsible Official: ***Ken A. McMillen***

Title of Responsible Official: ***Location Manager***

Date: ***November 24, 2015***

Table of Contents

1.0 INTRODUCTION

On March 23, 2000, the United States Environmental Protection Agency promulgated National Emissions Standards For Hazardous Air Pollutants (NESHAP) for Secondary Aluminum Plants under 40 CFR Part 63, Subpart RRR. These regulations, which are applicable to secondary aluminum operations, establish regulations on the emissions of organic hazardous air pollutants (HAPs), inorganic gaseous HAPs (hydrogen chloride, hydrogen fluoride, and chlorine), and particulate HAP metals. Alcoa, Inc. - Tennessee Operations is a major source of HAPs and is required to comply with the MACT standards promulgated on March 23, 2000.

40 CFR 63.1510 requires each affected facility to prepare and submit an Operation, Maintenance and Monitoring (OM&M) Plan to the regulatory agency for each affected facility. As outlined in 40 CFR 63.1510 (b), the OM&M Plan should address the following elements:

1. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device.
2. A monitoring schedule for each affected source and emission unit.
3. Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in § 63.1505.
4. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including:
   (i) Calibration and certification of accuracy of each monitoring device according to the manufacturer's instructions or at least once every 6 months; and
   (ii) Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in subpart A of this part.
5. Procedures for monitoring process and control device parameters, including procedures for annual inspections of afterburners, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used.
6. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in paragraph (b)(1) of this section, including:
   (i) Procedures to determine and record the cause of a deviation or excursion, and the time the deviation or excursion began and ended; and
   (ii) Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed.
7. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

8. Documentation of the work practice and pollution prevention measures used to achieve compliance with the applicable emission limits and a site-specific monitoring plan as required in paragraph (o) of this section for each group 1 furnace not equipped with an add-on air pollution control device.

The following sections of this OM&M Plan address each of the above elements.

1.1 Plant Description and Operation

The South Ingot facility consists of two casting pits for casting of aluminum ingots.

- Casting Pit No. 1
  - Holding Furnaces 5, 6, and 7
  - North and South Inline Degassers
- Casting Pit No. 3
  - Melting Furnaces 9 and 11
  - Holding Furnaces 10 and 12
  - North and South Inline Degassers

Casting Pit No. 1 includes three holding furnaces and two inline degassers. Molten metal from the adjacent primary aluminum production operation is input into these holding furnaces where alloying and salt fluxing occurs. The molten metal is then transferred to molds that form aluminum ingots via an inline degasser and filter. The inline degasser is used for final purification of the metal through the addition of chlorine gas flux via rotors in the degasser. Skimming of the furnace occurs prior to tapping of the furnace. The furnace is tapped as production schedule dictates. The holding furnaces operate in a batch mode. No pollution control equipment is utilized for Casting Pit No. 1.

Casting Pit No. 3 includes two melting furnaces, two holding furnaces and two inline degassers. Scrap metal from on-site fabrication operations and from off-site locations is charged into the melting furnaces in addition to a salt flux. The molten metal is then tapped to the adjacent holding furnaces where alloying and salt fluxing occurs. Molten metal from the adjacent primary aluminum production operation is input into these holding furnaces as well. The molten metal is then transferred to molds that form aluminum ingots via an inline degasser and filter. The inline degasser is used for final purification of the metal through the addition of chlorine gas flux via rotors in the degasser. Skimming of the furnace occurs prior to tapping of the furnace. The furnace is tapped as production schedule dictates. The holding furnaces operate in a batch mode. No pollution control equipment is utilized for Casting Pit No. 3.

Affected emission units covered by this OM&M plan are summarized below:

Emission Unit	Description	Classification
Melting Furnace No. 9	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace

Emission Unit	Description	Classification
Melting Furnace No. 11	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 10	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 12	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 5	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 6	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 7	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Pit 1 North Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable
Pit 1 South Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable
Pit 3 North Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable
Pit 3 South Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable

2.0 OM&M PLAN ELEMENTS

2.1 Process and Control Device Parameters (63.1510(b)(1))

Process and control device parameters must be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device. The following process parameters are to be monitored:

Parameter	Emission Unit	Monitoring Range [1,2]
Production Rate	Holding Furnace No. 5	360,000 pounds/charge
	Holding Furnace No. 6	360,000 pounds/charge
	Holding Furnace No. 7	360,000 pounds/charge
	Melting Furnace No. 9	280,000 pounds/charge
	Melting Furnace No. 11	280,000 pounds/charge
	Holding Furnace No. 10	360,000 pounds/charge
	Holding Furnace No. 12	360,000 pounds/charge
Reactive Flux Injection Rate	Pit No. 3 Melting Furnaces 9&11;	0-0.9 pounds of chlorine/ ton of charge (maximum of 1.6 pounds of salt per ton of metal)
	Pit No. 1 Holding Furnaces 5, 6, & 7; Pit No. 3 Holding Furnaces 10&12	0-0.6 pounds of chlorine/ton of charge (maximum of 1.1 pounds of salt per ton of metal)

Parameter	Emission Unit	Monitoring Range [1,2]
Reactive Flux Injection Rate - Chlorine	Pit No. 1 Inline Degassers (1 North and 3 South)	0.045 pounds chlorine per ton of metal processed
	Pit No. 3 Inline Degassers (3 North and 3 South)	0.045 pounds of chlorine per ton of metal processed
Purchased Scrap	Melting Furnace No. 9	Limited to **90,000 pounds** of oily purchased scrap per charge
	Melting Furnace No. 11	Limited to **90,000 pounds** of oily purchased scrap per charge

[1] ***Furnace production weight range is based on the design capacity of each furnace.***
[2] ***Chlorine in salt factor is equivalent to 0.54.***

2.1.1 Site-Specific Monitoring Plan (63.1510(o))
A site-specific monitoring plan (SSMP) is required by 63.1510(o) for each uncontrolled Group 1 furnace. Elements of the SSMP applicable to Alcoa Tennessee Operations include:

- Documentation of work practice, equipment/design practice, pollution prevention practice, or other measure to meet the applicable emission standards;
- Provisions for unit labeling, feed/charge weighing, and flux weighing; and,
- Scrap inspection program.

Affected emission units covered by the SSMP are summarized below:

Emission Unit	Description	Classification
Melting Furnace No. 9	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Melting Furnace No. 11	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 10	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 12	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 5	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 6	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 7	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace

The South Ingot Site-Specific Monitoring Plan (SSMP) is included in Appendix A.

2.2 Parameter Monitoring Schedule (63.1510(b)(2) and (5))
The monitoring schedule for each affected source and emission unit will be as follows:

Emission Unit	Parameter	Monitoring Requirement	Frequency
Uncontrolled Group 1 Furnaces	Production Weight	Must install, calibrate, operate, and maintain a device to measure and record the aluminum production from the unit (measurement accuracy must meet +/- 1 percent). The procedure to utilize production weight for aluminum production on a unit basis is included in Appendix B.	Normal operating cycle
	Total Reactive Flux Injection Rate	Record the number of pre-weighed salt flux bags added to furnace and calculate flux injection rate (lb/ton) and compare to operating range.	Normal operating cycle
	Purchased Scrap Charged	Purchased scrap is staged for each melting furnace charge. No more than 90,000 pounds of oily purchased scrap is charged.	Monthly inspection of staging practice
	Scrap Contamination Levels	Monitor purchased scrap through procurement process and scrap inspection program (Appendix A).	Each scrap shipment
	Labeling	The furnaces will require visible labels that identify the applicable emission limits and means of compliance including type of unit and applicable operational controls. An example label is included in Appendix C.	Monthly inspection of label
	Emission rates for PM, HCl, and dioxin/furans (melting furnaces only)	Conduct performance testing to determine emissions and establish parametric limits. A summary of the initial performance test results is included in Appendix D.	Once every 5 years
Inline Degassers	Inline degasser aluminum throughput	Must install, calibrate, operate, and maintain a device to measure and record the aluminum production from the unit (measurement accuracy must meet +/- 1 percent).	Normal operating cycle

Emission Unit	Parameter	Monitoring Requirement	Frequency
	Total Reactive Flux Injection Rate - Chlorine	Operate mass flow/data acquisition system to measure chlorine usage. Calculate flux injection rate (lb/ton) and compare to operating range	Record in 15-minute blocks; calculate total rate for operating cycle Normal operating cycle
	Labeling	The inline degassers will require visible labels that identify the applicable emission limits and means of compliance including type of unit and applicable operational controls. An example label is included in Appendix C.	Monthly inspection of label
	Emission rates for PM and HCl	Conduct performance testing to determine emissions and establish parametric limits. A summary of the initial performance test results is included in Appendix D.	Once every 5 years

2.3 Proper Operating and Maintenance Procedures for Each Process Unit (63.1510(b)(3))

Procedures must be implemented for the proper operation and maintenance of each process unit used to meet the applicable emission limits or standards in 63.1505.

Process Unit	Operating or Maintenance Procedure
Uncontrolled Group 1 Furnaces	Operate within the purchased scrap and reactive flux limitations and the scrap inspection program established in section 2.1 and 2.2
Inline Degassers	Operate within the reactive flux limitations established in section 2.1 and 2.2

2.4 Procedures for Proper Operation and Maintenance of Monitoring Devices or Systems (63.1510(b)(4))

The following monitoring systems are used to determine compliance of the monitoring devices including the procedures that will be initiated to assure proper operation and maintenance of these systems are as follows:

Monitoring System	Maintenance and Calibration Procedure
Weigh scales for production weight	On a semi-annual basis, routine maintenance will be performed on the scales as required, and calibrating the scales to ± 1% accuracy.
Chlorine mass flow meters	On a semi-annual basis, routine maintenance will be performed on the mass flow meters as required and a confirmation determination of the meter performance to ± 1% accuracy will be completed using manufacturer procedures (Appendix E).

2.5 Procedures for Monitoring Process Parameters (63.1510(b)(5))

Procedures must be implemented for the proper operation and maintenance of each monitoring device used to meet the applicable emission limits or standards in 63.1505. Procedures for the proper operation and maintenance of monitoring devices or systems are summarized below.

Emission Unit	Parameter	Procedure or Device	Required Accuracy	Data Record
Uncontrolled Group 1 Furnaces	Production Weight	Hydraulic flow meter	± 1% of weight being measured	Computer data system
	Purchased Scrap	Manual staging procedure	Not applicable	Manual log sheet
	Reactive Flux Injection Rate	Record number of bags of salt charged	± 1% of weight being measured	Computer data system
Inline Degassers	Reactive Flux Injection Rate - Chlorine	Mass flow meter	± 1% of weight being measured	Computer data system

2.6 Corrective Actions (63.1510(b)(6))

Corrective actions to correct deviations from acceptable parameter ranges are summarized below:

Parameter	Corrective Action
Chlorine flow outside of the established operating parameter range –	1. The operator is to confirm the system status and the chlorine flow values received against the chlorine meter readouts. 2. If chlorine flow outside the established ranges is confirmed, the operator is to: a. decrease the chlorine flow rate to get within the

Parameter	Corrective Action
Inline Degasser	established operating parameter range, or b. turn off the chlorine flow to stop reactive fluxing 3. Log the date and time that the parametric excursion began and ended 4. Notify the shift supervisor. The shift supervisor is to review the system status, and if needed, notify maintenance personnel and initiate a work order for repairs/replacements 5. If needed, any repairs or replacements are to be made in a safe, efficient and timely manner. 6. The corrective action is to be logged in the startup, shutdown, and malfunction (SS&M) log, and specifically including the following required information: a. cause of the excursion b. action(s) taken to correct c. date and time corrective action(s) was initiated and completed d. steps to prevent reoccurrence of the excursion
Purchased Scrap Charge Limit Exceeded – Melting Furnace	1. Log the date and time the parametric excursion began and ended 2. Notify the shift supervisor. The shift supervisor will verify that the limit was exceeded. 3. The corrective action is to be logged in the SS&M log, and specifically including the following required information: a. cause of the excursion b. action(s) taken to correct c. date and time corrective action(s) was initiated and completed d. steps to prevent reoccurrence of the excursion
Reactive Salt Flux Injection Limit Exceeded – Melting or Holding Furnace	1. Log the date and time the parametric excursion began and ended 2. Notify the shift supervisor. The shift supervisor will verify that the limit was exceeded. 3. The corrective action is to be logged in the SS&M log, and specifically including the following required information: a. cause of the excursion b. action(s) taken to correct c. date and time corrective action(s) was initiated and completed d. steps to prevent reoccurrence of the excursion

2.7 Process Maintenance Schedule (63.1510(b)(7))

A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance. The following monitoring systems are used to determine compliance of the pollution control equipment including the procedures that will be initiated to assure proper operation and maintenance of these systems are as follows:

Monitoring System	Maintenance Schedule
Weigh scales for production weight	On a semi-annual basis, routine maintenance will be performed on the scales as required, and calibrating the scales to ± 1% accuracy.
Chlorine Mass Flow Meters	On a semi-annual basis, routine maintenance will be performed on the mass flow meters as required and a confirmation determination of the meter performance to ± 1% accuracy will be completed using manufacturer procedures (Appendix E).

2.8 Documentation of Work Practice and Pollution Prevention Measures (63.1510(o)(1))

The parametric monitoring required under the regulation (flux use, scrap inspection, etc.) and documented in this OM&M plan and the SSMP plan constitute the work practices and pollution prevention measures for ensuring compliance.

2.9 Identification of Each Emission Unit

Each emission unit affected by the regulation is listed below:

Emission Unit	Description	Classification
Melting Furnace No. 9	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Melting Furnace No. 11	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 10	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 12	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 5	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 6	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 7	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Pit 1 North Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable

Emission Unit	Description	Classification
Pit 1 South Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable
Pit 3 North Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable
Pit 3 South Inline Degasser	Inline degasser with reactive flux addition (chlorine)	Not applicable

2.10 Specific Pollution Prevention Measures
All furnaces and inline degassers included in this OM&M plan utilize pollution prevention measures. The effective date of the aforementioned pollution prevention measures is March 24, 2003.

2.11 Emission Limit Calculations and Performance Test Results
A summary of performance test data is included in Appendix B. Emission limits have been established according to the existing state air permits based on 24-hour averaging periods. 3-day, 24-hour SAPU averaging will not be implemented for emission units in this OM&M plan.

2.12 Information and Data Demonstrating Compliance for Each Emission Unit
Work practice and pollution prevention measures utilized to determine compliance with the secondary MACT regulation are addressed in previous sections for those emission units covered by this OM&M plan.

2.13 Monitoring Requirements Applicable to Emission Units in a SAPU
As stated in section 2.11, no SAPU averaging will be performed for the emission units covered in this OM&M plan.

Appendix A

Site-Specific Monitoring Plan for Uncontrolled Group 1 Furnaces

A site-specific monitoring plan (SSMP) is required by 63.1510(o) for each uncontrolled Group 1 furnace. Elements of the SSMP applicable to Alcoa Tennessee Operations include:

- Documentation of work practice, equipment/design practice, pollution prevention practice, or other measure to meet the applicable emission standards;
- Provisions for unit labeling, feed/charge weighing, and flux weighing; and,
- Scrap inspection program.

Affected emission units covered by the SSMP are summarized below:

Emission Unit	Description	Classification
Melting Furnace No. 9	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Melting Furnace No. 11	Batch melting furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 10	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 12	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 5	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 6	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace
Holding Furnace No. 7	Batch holding furnace with reactive flux addition (salt)	Group 1 Furnace

Process Operating Parameters and Documentation of Work Practice and Pollution Prevention Measures (63.1510(o)(1) and (2))

Process parameters must be established to determine compliance, along with established operating levels or ranges, as applicable, for each process. These parameters were established during the initial performance testing conducted for the applicable emission units. As allowed by the existing TDAPC air permit and as established through the initial performance testing, the following process parameters are to be monitored for uncontrolled group 1 furnaces:

Parameter	Emission Unit	Monitoring Range
Production Rate	Holding Furnace No. 5	360,000 pounds/charge
	Holding Furnace No. 6	360,000 pounds/charge
	Holding Furnace No. 7	360,000 pounds/charge
	Melting Furnace No. 9	280,000 pounds/charge
	Melting Furnace No. 11	280,000 pounds/charge
	Holding Furnace No. 10	360,000 pounds/charge

Parameter	Emission Unit	Monitoring Range
	Holding Furnace No. 12	360,000 pounds/charge
Reactive Flux Injection Rate	Pit No. 3 Melting Furnaces 9&11;	0-0.9 pounds of chlorine/ ton of charge (maximum of 1.6 pounds of salt per ton of metal)
	Pit No. 1 Holding Furnaces 5, 6, & 7; Pit No. 3 Holding Furnaces 10&12	0-0.6 pounds of chlorine/ton of charge (maximum of 1.1 pounds of salt per ton of metal)
Purchased Scrap	Melting Furnace No. 9	Limited to **90,000 pounds** of oily purchased scrap per charge
	Melting Furnace No. 11	Limited to **90,000 pounds** of oily purchased scrap per charge

**** Note that furnace production weight range is based on the design capacity of each furnace.***

Provisions for Labeling, Weight Measurement, and Flux Weight Measurement (63.1510(o)(3))

Emission Unit	Parameter	Monitoring Requirement	Frequency
Uncontrolled Group 1 Furnaces	Production Weight	Must install, calibrate, operate, and maintain a device to measure and record the aluminum production from the unit (measurement accuracy must meet +/- 1 percent). The procedure to utilize production weight for aluminum production on a unit basis is included in Appendix B.	Normal operating cycle
	Total Reactive Flux Injection Rate - Salt	Record the number of pre-weighed salt flux bags added to furnace and calculate flux injection rate (lb/ton) and compare to operating range	Normal operating cycle
	Purchased Scrap Charged	Purchased scrap is staged for each melting furnace charge. No more than 90,000 pounds of oily purchased scrap is charged.	Monthly inspection of staging area
	Scrap Contamination Levels	Monitor purchased scrap through procurement process and scrap inspection program (Appendix A).	Each scrap shipment

Emission Unit	Parameter	Monitoring Requirement	Frequency
	Labeling	The furnaces will require visible labels that identify the applicable emission limits and means of compliance including type of unit and applicable operational controls. An example label is included in Appendix B.	Monthly inspection of label
	Emission rates for PM, HCl, and dioxin/furans (melting furnaces only)	Conduct performance testing to determine emissions and establish parametric limits. A summary of the initial performance test results is included in Appendix D.	Once every 5 years

Scrap Inspection Program (63.1510(o)(7), (8), (p) and (q))
63.1510 requires each affected facility to implement a scrap inspection program for each Group 1 furnace without emission controls. A program can be implemented for non-uniform and uniform scrap. Alcoa Inc. – Tennessee Operations has implemented a program where only uniform scrap from a pre-qualified supplier is purchased. As outlined in 40 CFR 63.1510 (q), a uniform scrap inspection program should address the following elements:

1. Procedures for the characterization of and documentation of the contaminant level of the scrap prior to the performance test.
2. Limitations on the furnace feed/charge to scrap of the same composition as that used in the performance test. If the performance test was conducted with a mixture of scrap and clean charge, limitations on the proportion of scrap in the furnace feed/charge to no greater than the proportion used during the performance test.
3. Operating, monitoring, record keeping, and reporting requirements to ensure that no scrap with a contaminant level higher than that used in the performance test is charged to the furnace.

Procedures for the Characterization of and Documentation of Contaminant Level of Scrap Prior to the Performance Test (63. 1510(q)(1))
Utilizing extensive data compiled by Alcoa Rigid Packaging Division (RPD) Metals Procurement and Ingot metal purchasing personnel, an analysis of incoming purchased scrap aluminum was performed. A purchased scrap questionnaire was prepared and submitted to all purchased scrap vendors utilized by Alcoa.

The results of the analysis indicated that a significant majority of purchased scrap contained minimal or no oil contamination. *No coated materials (e.g., painted scrap) are processed at Tennessee Operations ingot facilities.* The highest oil content of any

purchased scrap processed in the uncontrolled Group 1 furnaces was determined to be "Class 1" purchased scrap. Class 1 purchased scrap is material received back from the can manufacturer in a bailed form and contains a small amount of oil. Oil sampling prior to the initial performance testing indicated that the average oil content of Class 1 purchased scrap is 1.5 % by weight. During the performance test, 90,000 pounds of purchased scrap was charged to each melting furnace.

Limitations on the Furnace Feed/Charge (63.1510(q)(2))
Given that the results of the initial performance testing indicated compliance with the secondary MACT standards, the 90,000 pounds of oily scrap per charge limitation was implemented as a furnace charge limitation for purchased scrap.

Operating, Monitoring, Record Keeping, and Reporting Requirements (63.1510(q)(3))
Purchased scrap is procured by the Ingot Metal Planner to meet the monthly metal plan needed to support the established ingot casting schedule. Purchased scrap is screened against the purchased scrap standards for uniform purchased scrap and is specified to be clean and free of coatings and non-aluminum contamination. The South Ingot furnace operator inspects the load and verifies that the purchased scrap meets the specifications for uniform scrap prior to unloading. The furnace operator documents the inspection on the South Ingot scrap inspection form (example attached). Purchased scrap is stored in designated lanes. The uniform purchased scrap is blended with other clean metal units to build a furnace charge that meets the total weight and analysis restrictions of for each charge. The furnace operator transports the staged metal charge from the pad into the melting furnace building and places it intact in front of a bottom dump bucket (BDB). The BDB is filled with this charge and subsequently dumped into the furnace during charging. The staged blended charges remain intact from the storage pad to the melting furnace.

ALCOA
Tennessee Operations

2009/02/18

Purchased Scrap Inspection/Unloading Procedures

1. Secure "Purchased Scrap Inspection/Unloading Data Sheet".

2. Confirm pre-approved supplier of scrap and document on "Purchased Scrap Inspection/Unloading DATA Sheet".

3. Designate purchased scrap as clean or oily scrap from pre-approved supplier designation chart and document.

4. Inspect scrap for inspection procedure
    a. Look for excessive oil/grease (e.g., oil pooling on floor of delivery truck or dripping from scrap, etc.)
    b. Presence of foreign materials (e.g., painted scrap, plastic, rubber, glass, etc.)
    c. Integrity of bales

5. Document on data sheet if scrap load accepted or rejected.
    a. If scrap load rejected, contact on shift Supervisor.

6. Unload scrap, transport and store in appropriate designated storage area for purchased scrap and complete "Inspection/Unloading Data sheet" and return completed sheet with BOL to Metal Control.

ALCOA
Tennessee Operations

2009/02/18

Purchased Scrap Inspection/Unloading DATA Sheet

Date Received: _____ **Supplier:** _____

Total Lbs.: _____

Inspection Procedure: (reasons for rejecting load)

1.) Look for excessive oil/grease (e.g., oil pooling on floor of delivery truck or dripping from scrap, etc.)
2.) Presence of foreign materials (e.g., painted scrap, plastic, rubber, glass, etc.)
3.) Integrity of bales
4.) Inspect for presence of moisture, oxidation, ammonium nitrate or other oxidizers, salts, bath, sulfates, rust or other corrosion

Scrap accepted/rejected:

1.) Accepted ☐
2.) Rejected ☐

Reason for rejection:

_____

Scrap Designation:(determined from pre-approved suppliers listing)

1.) Oily purchased scrap. ☐
2.) Clean/dry purchased scrap ☐

Purchased Scrap Staging Area:

1.) Oily scrap storage area ☐
2.) Clean/dry storage area ☐

Received/Inspected By: _____

Comments: _____

Return completed sheet to Metal Control.

Appendix B

Aluminum Production Weight Procedure

Secondary MACT Aluminum Production Weight Procedure for South Ingot
Emission Source No. 05-0008-51; Alcoa Inc. – Tennessee Operations

After casting, each ingot is assigned a weight based on length cast, width, thickness, and density. The weights are assigned by Alcoa's production data tracking system SAP. The ingot width is known from the size molds used to cast the ingot. The ingot length and width are then multiplied by a weight factor to produce the total weight of the ingot. The weight factor is applied within our production tracking software program and is set by Alcoa quality control personnel.

The length is determined by measuring the flow of hydraulic fluid through a Micro Motion flow meter. A Programmable Logic Controller (PLC) is used to add up the length of the ingot. An ingot is measured by a tape measure every day as a check of the accuracy of the computer length. If the length is not within +/- 1", the reaction plan calls for an adjustment to be made to correct for this difference. The length process is watched as an "In Control and Capable" variable. The process manager audits the length process monthly.

It is very important to cast to the target length with minimal variation for ingot recovery. Ingot length corresponds to an amount of finished pounds. Our customer's equipment has a maximum weight they can handle. Customers prefer larger coils to minimize the number of coils feed changes per day. Alcoa targets coil weight shipments as close the customer's requirements in order to minimize shipping costs and reduce costly internal scrap. Ingot length is a critical component of this process. If ingots are produced out of specification then corrective measure must be taken which include length correction via sawing and/or scrapping the material for those ingots, which are determined to be too short. In a system, where production is driven by inventory levels these are costly mistakes that directly impact inventory levels, shipping schedules and finally, costs.

For quality assurance purposes, an ingot is weighed on a daily basis to calibrate the PLC and manual measurement procedure using the available Secondary MACT-calibrated weigh scale.

Calculation of Furnace-Specific Weights

As stated, production weight is the basis for all input and throughput weights. The following equations are utilized to determine unit-specific weights:

Holding Furnace Input Weight (HFIW)

HFIW (lb/charge) = HFC – PW + NML

where,

HFC = Holding Furnace Capacity (lb/charge)

PW = Measured Production Weight (lb/charge)
NML = Net Melt Loss (lb/charge)

Note: NML is obtained from monthly average net melt loss for the South Ingot facility

Melting Furnace Input Weight (MFIW)

MFIW (lb/charge) = HFIW – MMCIW

where,

HFIW = Holding Furnace Input Weight (lb/charge)
MMCIW = Molten Metal Crucible Input Weight (lb/charge)

Appendix C

Example Furnace Label and Monthly Inspection Form

Melting Furnace No. 11
Emission Source No. 05-0008-51
Alcoa Stack ID: TNMFRN01107

Secondary Aluminum MACT Affected Facility Category:
Group 1 Furnace

Maximum Allowable Emission Limits:
- Particulate Matter = 0.40 lb/ton of feed
- Hydrogen Chloride = 0.40 lb/ton of feed
- D/F = 15 TEQ/Mg of feed

Input Materials:
- Scrap/Molten Aluminum Charge Rate = 280,000 lb/charge
- Purchased aluminum scrap limited to 90,000 lb per charge
- Reactive Flux (Salt Flux) = 0.7 pounds of reactive chlorine/ton of metal (125 lb per charge maximum)

Control Technology to Maintain Compliance:
Pollution prevention via aluminum scrap management

Control Technology Operating Parameters:
Scrap inspection program

Label Monthly Inspection Form [Example]

Semi-Annual Compliance Monitoring Period: ______________________

Month/ Year	#5 FCE	#6 FCE	#7 FCE	Pit #1 N Deg	Pit #1 S Deg	#9 FCE	#10 FCE	#11 FCE	#12 FCE	Pit #1 N Deg	Pit #1 S Deg	Initial

Appendix D

Performance Test Summary

Summary of Secondary MACT On-Going Performance Test Results
Emission Source Nos. 05-0008-57 and 05-0008-21
Alcoa Inc. – Tennessee Operations

Source	Pollutant	Average Emission Rate	Emission Standard	Percent of Standard
Melting Furnace No. 11	PM	0.023 lb/ton	0.40 lb/ton	5.8 %
	HCl	0.0035 lb/ton	0.40 lb/ton	0.9 %
	D/F	0.173 ug TEQ/Mg	15.0 ug TEQ/Mg	1.15 %
Holding Furnace No. 12	PM	0.0438 lb/ton	0.40 lb/ton	11 %
	HCl	0.0242 lb/ton	0.40 lb/ton	6.1 %
Pit No. 3 North Inline Degasser	PM	0.00027 lb/ton	0.01 lb/ton	2.7 %
	HCl	0.0000085 lb/ton	0.04 lb/ton	0.02 %

Notes:

1) Note that this is only a summary of the most recent performance tests (October 2015). The full test report for the performance test is available for review on-site.
2) As allowed by the secondary MACT regulation in 63.1511(f), representative emission units may be tested to demonstrate compliance with the emission standards. As outlined in a request submitted to the Tennessee Division of Air Pollution Control (TDAPC) on April 8, 2002 and included in the Site-Specific Test Plan dated July 17, 2002, the representative emission units for South Ingot Pit No. 1 and Pit No. 3 were:

    - Melting Furnace No. 11;
    - Holding Furnace No. 12; and,
    - Pit 3 North Inline Degasser.

Appendix E

Chlorine Mass Flow Meter Manufacturer Specification

Micro Motion

ALCOA

Detecting Flow Calibration Factor Changes

Using the Micro Motion Density Measurement

Abstract: Field calibration of any flow meter is expensive and time consuming. However, it is necessary in some installations to calibrate (or "prove") meters in the field in spite of the expense and difficulty. Although Micro Motion Coriolis meters generally do not change calibration (since there are no moving parts), they are not exempt from the calibration requirements of certain applications.

The purpose of this document is to describe a methodology that provides an alternative procedure for verifying a Coriolis meter's mass flow calibration stability over time.

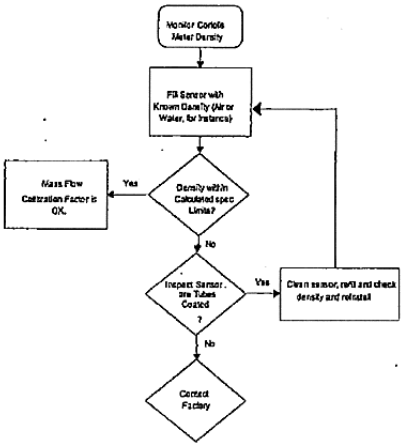
Detecting Flow Calibration Factor Changes
Using the Micro Motion Density Measurement

1. Methodology for Validating the Mass Flow Measurement by Using the Density Measurement from the Coriolis Meter

The simplest method for validating the stability of the mass flow calibration factor is to use the density measurement to confirm that the flow-tube structure has remained unchanged. By periodically filling the flow-tube structure with a fluid of known density, the variability of the measurement can be tracked over time. The variability between measured and expected values can used to determine the uncertainty confidence level of the mass flow calibration factor. It is important to note that the fluid must have known density characteristics. Any contamination of the fluid (by air, water or variable composition, for example) will skew the density measurement results. Remember that the fluid in the tube *is* the transfer standard so its density must be well understood.

The frequency of calibration verification is often requested in quality or regulatory procedures. Under ideal conditions, the density output would be continuously monitored and plotted against calculated control limits. A continuous verification of the maximum uncertainty of mass flow calibration factor is then easily seen. However, it is also acceptable to periodically confirm a single density value and plot that point against calculated control limits. It is recommended that this periodic confirmation occur at least once every six months.

A procedure for using the density measurement to quantify mass flow calibration stability is presented below:



Procedure for Verifying the Mass Flow Calibration by Checking the Density Measurement

The key is to trend differences between the meter's density reading and the reference fluid's expected density. Care must be taken to insure that the reference fluid density is correct. Important aspects for trending the measurements are described below:

1. Fill the flow-tubes with a fluid of known density. Perform an initial density check upon installation of the meter. This can this be performed with gas flowing and the unit is in the normal operating mode.
2. Record the indicated meter density and fluid pressure.
3. Calculate the statistical control limits based on desired confidence limits for mass-flow calibration factor.
4. Control-chart the indicated fluid density with the calculated confidence limits.
5. Repeat steps 1 and 2 periodically according to accepted intervals..
6. Alarm on out-of-control density points

2. *What Impacts a Coriolis Meter's Calibration*

Since a Coriolis meter has no moving parts there is nothing to wear or break. Therefore, in a clean fluid, the expectation is that the meter will never exhibit a change in calibration. However, fluids that corrode or erode the flow tube will alter the mechanical characteristics of the meter and will change the meter calibration. When corrosion or erosion occurs, the density calibration of the meter is also affected. Therefore, a shift in the density calibration of the meter can be used as an indication that the meter's mass flow calibration has changed, which is a result of flow-tube mechanical changes. This relationship is shown in Figure 1, which shows the interaction of the density and mass flow measurements in a sensor that was purposely corroded.

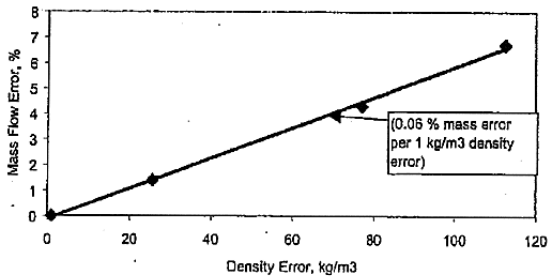


Figure 1 – Density and Mass Flow Errors with Progressive Tube Thinning on a F100. Each Point Represents Approximately 0.06% Flow Area Increase

When a meter tube corrodes the actual vibrating structure is changed because tube wall thickness decreases. Tube thinning therefore causes both the density and mass flow indications to change.

3. *Detecting Mass Flow Calibration Errors Based on Density Changes*

Due to the fact that tube wall thickness variations impact both the mass flow and density measurements, a diagnostic technique can be employed to assess the state of the meter's mass flow calibration, by checking the meter's density calibration. Performing a density check is easier to do than doing a mass flow verification. A density check can be done quite simply, by filling the sensor with

a fluid of known density and making sure that the meter reads the correct density.

One difficulty in applying this procedure is that fluids that coat the flow tubes can also cause a shift in the meter's density measurement. A coating on the inside diameter of sensor tubes affects the meter in the same way a changing density fluid does; the coating together with the process fluid make up a composite density. Therefore, the density indication from the meter will be skewed from the process fluid density by the amount of the coating. Since the coating is not changing the tube structure in any way, the mass flow measurement is not significantly affected. Figure 2 shows the results of a test conducted correlating changing density and mass flow with a coating applied to the flow tubes.

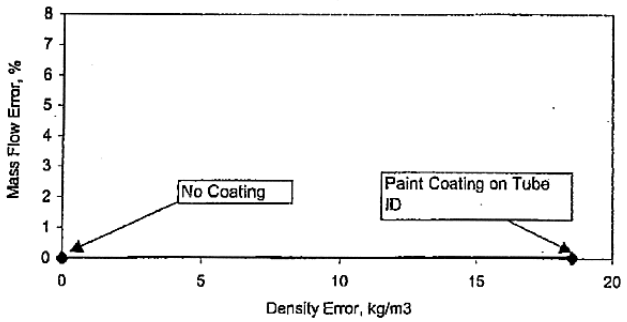


Figure 2 – Density and Mass Flow Errors with a Paint Coating on the ID of a CMF025 (6% Flow Area Decrease)

As can be seen by comparing Figures 1 and 2, coating does not impact the mass flow measurement as much as corrosion does. Therefore, an offset in the meter's density measurement accuracy may not indicate that the mass flow measurement has changed, but that coating has built up on the flow tubes. This condition can generally be verified by physically removing the sensor and inspecting it for coating buildup. If coating exists, the sensor can be cleaned, its density rechecked, and be reinstalled and put back into operation. If no coating is detected, the meter should be sent back to the manufacturer to verify its mass flow calibration. If the mass flow calibration has shifted then it is likely that a corrosion problem exists. At this point alternate flow tube materials should be considered to eliminate future corrosion problems. The methodology for checking the meter using these concepts is presented below.

Calculation of Statistical Control Limits.

Micro Motion will experience a 0.06% change in mass flow measurement for every 0.001g/cc variation between known and expected density measurement caused by changing flow-tube structure. To establish the statistical control limits around an expected value, a user will:

1. Establish the worst-case limit of mass flow calibration factor uncertainty, in percent.
2. Divide this value by 0.06%/0.001 gm/cc. Examples for several uncertainty levels are shown below.
3. The resulting density value is one side of the specification limit for the control chart.

As an example, assume that an application requires that a meter be validated to better than 0.3%.

$$\text{Density limit} = \frac{(0.3\%)}{(0.06\%)}(0.001 g/cc) = 0.005\ \text{g/cc}$$

The specification limit in this example is ±0.005 g/cc.

	Statistical Control Limits	
Mass Flow Calibration Factor Uncertainty Limits	g/cc	lb/ft^3
0.35%	0.0058	0.3646
0.50%	0.0083	0.5208
0.75%	0.0125	0.7813
1.00%	0.0167	1.0417

Please note that the full-scale density measurement capability of a Micro Motion sensor is greater than 0 to 5 g/cc (0 to 310 lb/ft3).

Example for Chlorine:

1. Establish Uncertainty Limits for Mass Flow Calibration Factor: EPA requirements for Secondary MACT are better than ±1%. In order to allow for a safety factor of 2, the proposed control limits are ±0.5%.

2. Calculate control chart limits based on Uncertainty Limit above:

$$\text{Density limit} = \frac{(0.5\%)}{(0.06\%)} X 0.0625 lb / ft3 = 0.5208 lb / ft3$$

The specification limit in this example is ±0.5208 lb/ft^3

3. Determine expected value of Chlorine at operating pressures and temperatures:

   - Chlorine at 50 psig and 68F has an operating density of 0.8102 lb/ft^3
   - Find the chlorine density for your operating pressure and temperature.

4. Monitor control chart limits around expected value. The control chart limits would be set at 1.331 lb/ft^3 and 0.2894 lb/ft^3. Please note that pressure changes greater than 30 psi or temperature changes greater than 120F would be needed to change the operating density outside of the control limits.

5. If an excursion beyond the control limits occurs, an inspection of the meter is required. The following procedure should be followed:

   a) Determine if operating pressure and/or temperature swings occurred in the process that would explain the variation.
   b) Determine if the quality of the Chlorine changed. The presence of air, water, or other impurities would impact the expected density value.
   c) If all other sources of variation have been eliminated, that the sensors Flow Calibration Factor needs to be re-established. Please contact your Micro Motion Sales or Service representative to arrange recalibration.